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ABSTRACT

There have been assumptions in the literature that sexuality education programs can increase adolescents' knowledge, help them clarify values, and improve decision making and communication skills; and that these changes, in turn, can reduce irresponsible sexual activity, unintended pregnancies, sexually transmitted diseases, some sexual dysfunctions, and can improve interpersonal relationships and self-perception. This study examined the relation between a comprehensive sexuality health education course and the self-perception of adolescents. Subjects were high school students who took either the self-esteem portion of a health class during the first 9 weeks of the first semester (N=104), students who took the reproductive knowledge portion of the class first (N=92), and a control group who took the health class second semester (N=86). Subjects completed the Self-Perception Profile for Adolescents and a teacher-made test of general reproductive knowledge as pretests, posttest, and delayed posttests. The results showed that students' level of reproductive knowledge was increased by taking the health class, but that students retained only 50% of that knowledge 9 weeks after taking the class. Analysis of the Self-Perception Profile posttest scores revealed no significant differences between groups. Changes in self-perception among students taking the self-esteem portion of the class were statistically insignificant. The survey instrument is appended. (NB)

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UNIVERSITY OF CALIFORNIA

SANTA CRUZ

An Analysis of the Relation Between Self-Perception and General Reproductive Knowledge in an Adolescent Population

A Thesis submitted in partial satisfaction
of the requirements for the degree of

MASTER OF ARTS

in

EDUCATION

by

Nancy Lynn Brown

June 1987

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Chapter 1

The Problem and Its Components

Paradoxically, adolescence is a period that is full of potential, yet not very fulfilling. Compared to a young child, whose interest is primarily the present, the adolescent's vision extends far into the future. This vision springs from the perception the adolescent has of her- or himself. At this stage of development--between about fifteen and eighteen years of age--the adolescent is very concerned with her- or himself. Questions such as what am I like, what should I become, how do people judge me, should I go to college, can consume the adolescent (Rosenberg, 1965).

The period of adolescence has been isolated and lengthened. Adolescents have found themselves without support and have consequently turned to each other for the basic needs of security and belonging. We have seen the development of an adolescent culture that questions and defies society's beliefs and practices while focusing on what are traditionally the least acknowledged aspects of adolescents' lives: bodies and sexuality.

This defiance can be a destructive influence on the personal development of adolescents. The most damaging effect of this alienation is negative self-perception. Underneath the rebellious, blue-haired, and promiscuous adolescents are misinformed and self-critical individuals. This is demonstrated by the rising suicide and pregnancy

rates for teens, the increased need for mental health services, and the tremendous rise in runaway and out-of-home placed children.

In the decades after 1920, social concern about problems like these fueled the controversy about sexuality education. It was proposed that sexuality education should be taught in schools in an attempt to destroy two related social phenomena: venereal disease and prostitution. According to Strong (1972),

> The sex educators believed that if it were possible to impress upon the minds of youth that the end of sex was procreation rather than pleasure, then it was possible to use the ideology of procreation as "the ballast, the regulator of sex." If the young believed that the purpose of sex was the conception of children, then premarital sex would be eliminated, prostitution abolished, and sexual excess in marriage ended. (p. 142)

Contemporary social science literature advocating sexuality education exhibits a simular instrumentalist concern regarding particular social problems and a parallel commitment to viewing sexuality in a particular way. The problem most often used today to justify sexuality education is teenage pregnancy. There is some consensus as to the inadequacy of adolescents' sources and levels of knowledge concerning the topic of sexuality. This lack of knowledge, along with an unwillingness to employ contraceptives, is identified as a major factor in producing the high pregnancy rates among adolescents. Sex education is offered as a way of lowering the teenage pregnancy rate by providing accurate

information and encouraging them to make use of contraception.

To achieve this goal, many schools and other youth-serving agencies have devoted a great deal of resources to sexuality education. One problem inherent in this approach is its narrow conceptualization of human sexuality. Once sexual activity is defined as heterosexual copulation, and once it is acknowledged that many teenagers are sexual, a focus on contraception is almost guaranteed (Diorio, 1985). By allowing the social problem of teenage pregnancy to determine the outlook and content of these programs, many other topics relating to sexuality are ignored.

Surprisingly, there have been very few research studies that address these issues, and many of them still leave some important questions about sexuality education unanswered. This paper will address some of these questions, specifically:

Does taking a comprehensive sexuality education course significantly improve an adolescent's self-perception?

Does taking this course significantly increase a student's amount of general reproductive knowledge?

Do students retain the new information or improved self-perception after taking the class?

How much change in reproductive knowledge or self-perception is a result of the course and how much is a result of simple maturation?

Purpose of the Study

The purpose of this study is to examine the relation between a comprehensive sexuality (health) education course and the self-perception of adolescents. The hypotheses that have guided the planning and implementation of this research are 1) there will be no significant statistical difference in the posttest mean scores of either measure between adolescents who have taken the sexuality portion of the health class first and those who have taken the ACHIEVE portion first, 2) there will be no significant statistical difference between mean scores immediately after taking each portion of the health class and delayed posttest mean scores nine weeks later, and 3) the mean pretest scores on both measures will not be significantly different between the experimental and control groups.

This research investigates the assumptions in the literature that sexuality education programs can increase adolescents' knowledge, help them better clarify values, and improve their decision making and communication skills. Further it questions that, in turn, these changes will reduce irresponsible sexual activity, unintended pregnancies, sexually transmitted diseases, some sexual dysfunctions, and will improve interpersonal relationships and self-perception.

Definition of Terms

This research defines self-perception as the consolidation of all the information processed from one's environment--a person's perception of how s/he is viewed by others and how s/he sees him or herself. Consequently, environmental and social experiences play a significant role in the building and molding of a person's self-perception.

A comprehensive sexuality education course includes the following topics (Kenney & Orr, 1984):

Sex roles vs. gender roles	Cultural differences
Media portrayal of sexuality	Crisis Intervention
Decision making	Intimacy
Self-esteem	Body image
Anatomy/Physiology*	Drug/Alcohol abuse
Eating disorders	Contraception*
Venereal disease*	Abortion/Adoption
Pregnancy*	Parenting
Sexual abuse	Homosexuality
Masturbation	Sexuality and religion
Sexual lifestyles	Sexual dysfunctions
Values clarification	Society's view of sexuality
Pornography	Changes at puberty

Since sexuality is often taught as part of a health class, other topics such as nutrition and cardiopulmanary resuscitation are also included in the curriculum. The topics in the list above marked with an asterisk are those most often covered in health classes, and are therefore the topics that comprise "reproductive knowledge" as referred to in this research.

The research for this study was carried out in a health class offered at a local high school. The class is eighteen weeks long, and is divided into two nine-week sections. One

nine-week section covers reproduction, nutrition, cardiopulmanary resuscitation, and the other health topics that used to comprise the entire eighteen-week health class. The recently developed nine-week section called ACHIEVE (Adolescents Changing Habits in Education, Values, and Esteem) focuses on self-esteem, communication skills, values clarification, and goal setting, as they pertain to individuals, families, and schools. The purpose of the ACHIEVE portion is to increase the self-perception of the adolescents taking the class. All students take both sections during one semester, half taking the health portion first, the other half taking the ACHIEVE portion first. One unfortunate consequence of this division is that the two sections do not reinforce each other: in the rush to cover all the material, it is impossible to integrate them.

Theoretical and Practical Justification of the Research

The theoretical justification of this study is founded on the generalization from current literature that the self-perception of many adolescents is negative, and that many of the problems faced by teenagers are conflicts related to sexuality and/or self-perception. This is compounded by the fact that most sexuality classes are not comprehensive, and therefore offer little knowledge or experience to be used in resolving these conflicts.

Adolescent rates of pregnancy, sexually transmitted diseases, eating disorders, and suicide continue to rise.

Adolescents obtain most of their retained information about sexuality outside of the classroom, and there is little evidence that the sexuality classes being required across the United States do anything to rectify these problems. The practical justification of this research is to provide an evaluation of the effects of the health class on both the self-perception and reproductive knowledge levels of adolescents. The class requires many resources and represents an innovative approach to some of the documented inadequacies of sexuality education. This project was designed to evaluate the class and contribute to the general literature concerning sexuality education and its relation to reproductive knowledge and the self-perception of adolescents.

Chapter 2

Review of Related Literature

Sexuality education is a growing social and educational phenomenon. It not only reflects, but also influences, change in contemporary values (Rogers, 1974). Sexuality education is now legal in all states; it is required in Maryland, New Jersey, and the District of Columbia (Schultz & Boyd, 1984). Often the stated goal of sexuality education is to promote responsible sexual behavior. This education, however, does not emphasize the psycho-social dimensions of adolescent sexuality that are being ignored by our society (Shore, 1984).

The attitude that a society takes toward sexuality reflects its vision of humanity as a whole (Holbrook, 1972). The dominant vision of our society is technical, and the general understanding is that human nature is mechanistic. As society becomes further dehumanized, it threatens to completely debase individual's concepts of themselves, and remove basic sexuality education from many aspects of everyday life.

Sexuality education, as it is understood today, was unknown until about 200 years ago. In ancient and medieval Europe, sex was seen as an integral part of life, not as a separate, problematic subject which needed special study (Haeberle, 1981). As childhood, and then adolescence, began to emerge as special--and innocent--periods of life, an

increasingly prudish society saw sexuality as dirty. By 1762, Rousseau alluded to sex as a mysterious and dirty thing.

Early in this century, activists such as Benjamin Lindsey, Margaret Sanger, and Bertrand Russell brought the right to obtain sexual knowledge to the forefront as a public issue. Their opponents, like the Reverend E. Lyttelton, were afraid of the results of public teaching about sexual reproduction. He felt that boys had to be taught to suppress their "animal urges" and girls protected from the "darker facts of life" (Lyttelton, 1910).

Current Theories of Sexuality Education

Between 1910 and the present, sexuality education has progressed from a dry repetition of factual information (or a study of the reproduction in plants), to a discipline fundamental to improving the quality of human life. The sexual revolution of the 1960s and 1970s, as well as ever-present differences in moral attitudes, have lent steam to the conflict that historically has surrounded sexuality education (Fraser, 1972). The issue, however, is no longer only whether sexuality education is needed, but what subject matter should be included in the curriculum specifically to address current social problems (Brested, 1970; Kenney & Orr, 1984; Schultz & Boyd, 1984).

As a society, we face many problems that are related to sexuality or sexual identity. In 1983, for example, wife

battering constituted 25% of all reported violent crime, an offense directly related to male sex roles (Coveney, 1984). The questions and fears we have regarding these acts have been addressed by much of the current literature, but no author has identified a solution, much less proposed a change in sexuality education curriculum to address these phenomena. If it is becoming a commonly held belief that sexuality is influenced by social institutions such as schools, the media, parents, and peer groups, why then are not our efforts to alleviate sexual dysfunction directed to the areas responsible for generating dysfunctional models? (Coveney, 1984; Sadker, 1977; Tuck, 1985)

Another question posed in much of the literature is how the effect of sexual socialization can be changed from domination to responsibility and respect (Brown, 1981; Kenney & Orr, 1984; Sadker, 1977). Many authors present pornography as one cause of the separation of "sex" from "wholeness" (Coveney, 1984; Holbrook, 1972). Pornography, however, is addressed in fewer than one percent of all sexuality education courses taught in the United States. This same absence is reported for subjects such as substance abuse, sexual lifestyles, sexual dysfunction, incest, rape, homosexuality, and masturbation (Schultz & Boyd, 1984).

The Effects of Sexuality Education

Not only does sexuality education attempt to increase students' knowledge of the subject matter, but it also, like

few other subjects, attempts to change the behavior of students outside the classroom (Kirby, 1984). Many studies of high school curricula have measured the impact of sexuality education on students' knowledge and the findings are nearly unanimous: instruction in sexuality education does increase knowledge (Coates, 1970; Cooper, 1982; Hoch, 1971; Parcel & Luttman, 1979).

There are however few studies on the effects of sexuality education on phenomena other than factual knowledge, such as pregnancy rates, amount of sexual behavior, and interpersonal skills. Most of the conclusions of that research are based on small samples, unreliable survey instruments, studies without control groups, or studies that use college students as subjects.

The Relation of Sexuality Education to Self-Perception

What is missing in the sexuality education literature is the effect of self-perception, values and culture on the development of non-oppressive and responsible sexuality (Brown, 1981). In our haste to present information in a way that does not offend the community, we have failed to address the human and moral aspects of sexuality, its development and function (Gordon, 1971; Kamii, 1984; Rogers, 1974; Todd, 1979).

In the early 1970s, Schofield (1973) examined the experiences young people in Britain had with sexual intercourse. Schofield expounded:

> The sad fact is that a large number of people do not enjoy their first experience of sexual intercourse, no matter how young or old they may be. About half of those who started young and about two thirds of those who started later appear to have had a negative reaction to their first experience. The reason in many cases must be because false attitudes and misinformation have not prepared the inexperienced. The combination of bad sex education which avoids telling them what to expect, and romantic stories in movies and magazines which lead them to expect too much, is probably the chief cause of their disappointment. (pg. 162-163)

That so many individuals report disappointment with intercourse undermines any claim that high rates of intercourse among adolescents are the result of the uninhibited pursuit of sexual pleasure made possible by the easing of social repression. Many adolescents do not engage in intercourse for pleasure or procreation. Why then, do they? One likely answer is suggested by Kitzinger (1984), who writes:

> The adolescent girl in our society may not feel she is an adult until she has had sexual intercourse, which often takes the place of the highly ritualized threshold to adulthood in Third World cultures. It is the act of penetration which, in itself, and uniquely among all other acts, symbolically represents sexual experience . . . Women often say that they used sex in adolescence to get proof that they were of value and that somebody wanted them. (pg. 36)

Adolescents, in this view, are encouraged by the culture to engage in intercourse.

By focusing a great deal of attention on providing contraceptive information and encouraging contraceptive use, sexuality educators reinforce this cultural bias. This instrumentalist approach to sexuality education is focused

on the problem of adolescent pregnancy, and leads educators to believe that sexuality education is not intended to examine the nature of sexuality (Diorio, 1985).

More research is required to determine the effects of different programs. Information is needed about the long-term impact of sexuality education on knowledge, self-perception and behavior.

Theories of Self-Perception

Early in this century, the study of the self represented a a legitimate domain of inquiry. Radical behaviorists excised concepts like "self-perception" from the vocabularies of scientists, but interest in the "self" and "self-systems" has reappeared as a legitimate construct within almost every branch of psychology and sociology (Harter, 1983a). That these fields should come to take interest in this aspect of personality speaks to the power of this concept to intrude upon established ways of thought and procedure (Rosenberg, 1965). Although each field bears the inert weight of its distinctive tradition, each has found the idea of self relevant to its concern.

Submerged in the literature about the self is a plethora of hyphenated constructs: self-concept, self-recognition, self-image, self-evaluation, self-monitoring, self-consciousness, self-reward, self-esteem, self-schematas, self-perception, and so on. The self is not a construct in its own right. For the purpose of this paper,

the definition of self-perception combines the constructs of self-concept and self-esteem within the Piagetian concept of adaptation to the environment: Self-perception is the consolidation of all the information processed from a person's environment--the person's perceptions of how s/he is viewed by others and how s/he sees him or herself. Consequently, environmental and social experiences play a significant role in molding an individual's self-perception. Therefore, when a person says, "That's me!" s/he is referring to the many attitudes, beliefs, values, and ideas that make up his or her total self-perception. The effect of self-perception on achievement in a variety of domains is the subject of many current research projects.

Some research shows that self-perception is a better predictor of a child's future academic success than intelligence test scores (Coopersmith, 1967). Since self-perception can influence cognitive growth, attention to affective education in child-rearing cannot happen too early. There are many programs that seek to make more positive self-perceptions in children and adolescents in an attempt to reduce social problems such as teen pregnancy, suicide, and chemical dependency. However, several studies (Cheek & Hogan, 1983; Leahy, 1981; Rosenberg, 1986) point to parental attitudes of worth conveyed to the individual as a major indicator of self-perception. Integrating the cognitive and affective domains in parent education (as well as child education) may lead to the development of higher

self-perception, and should be the topic of future research.

Self-Perception in Adolescence

Given the varying attitudes toward, and expectations of, adolescents, and given adolescent sensitivity to these appraisals, it is easy to see how adolescents develop fluctuating perceptions of themselves (Rosenberg, 1965). Books, movies, and television tend to portray adolescence as a period of extreme internal and interpersonal stress (Cowan, 1978). Clinical experience with depressed or suicidal adolescents supports this portrayal and also focuses on the inter-generational nature of the conflict that develops in families. When tension arises many parents feel they have lost control and abandon their teenagers to the peer culture. The strong bonds that these adolescents form may attack the cherished beliefs, customs, and traditions that have permeated our society for centuries (Simmons, 1977). This attack may alienate them further from many possible sources of support, such as teachers, religious organizations, and especially families. At no other point in our history have adolescents spent so much time with peers (Baumeister & Tice, 1986); the effects of this are only speculative.

With this pulling away comes autonomy. To the adolescent, there exists a world of internal thoughts, wishes, and feelings to which they have privileged access and about which, in general, they are the ultimate authorities (Rosen-

berg, 1986). The presence of this formal-operational capability allows adolescents to be introspective in an analytic mode, to think critically about themselves and about the way they think and behave. As Piaget notes, this widening of perspective brings with it a new form of egocentrism (Cowan, 1978). The adolescent may use this introspective ability to become preoccupied with him or herself, rather than coping with the expectations of the adults around them.

The egocentrism of adolescence declines as the result of interactions with peers and adults, and is facilitated by the taking on of adult roles and responsibilities (Harter, 1983). For Inhelder and Piaget (1958) occupational choice is the focal point of this process. The gradual nature of the process attests to the fact that formal-operational thought is not the precursor of the miraculous powers of deduction and self-discovery.

Measures of Self-Perception

In an attempt to locate a self-perception measure that would be appropriate for the fluctuating self-perceptions of adolescents, four instruments were considered for this study: The Self-Esteem Scale (Rosenberg, 1965), the Self-Esteem Inventory (Coopersmith, 1967), the Tennessee Self-Concept Scale (Fitts, 1965), and the Self-Perception Profile for Adolescents (Harter, 1986).

The Self-Esteem Scale was designed to measure attitudes toward the self along a favorable-to-unfavorable dimension

and was constructed for use in a large-scale survey of high school students (Rosenberg, 1965). Since the scale was to be administered along with several other scales in one class period, it contains only ten items, and was thus considered to general for the purpose of this study. The ten items are of the Likert type, allowing one of four responses: strongly agree, agree, disagree, and strongly disagree. In the Self-Esteem Scale, positively and negatively worded items are presented alternately in order to reduce the chance of a response set (Robinson & Shaver, 1969).

The Self-Esteem Inventory also offered a global self-esteem score. This scale is intended for children aged eight to ten and measures the evaluation which an individual "makes and customarily maintains with regard to himself" (Coopersmith, 1967). This measure containing 58 descriptive items, takes an estimated 20 minutes to administer, and requires the subject to check either "like me" or "unlike me" in response to each item. This scale yields a score of "high," "medium," or "low" to the self-esteem of children, and was not judged to be an appropriate measure for adolescents.

The Tennessee Self Concept Scale was designed as a widely applicable, well standardized, and multi-dimensional instrument to measure self concept. The scale consists of 100 self-descriptive statements which the subject uses to create a profile of himself or herself (Fitts, 1967). The scale is now available in two forms, a counseling form and a

clinical and research form. The research form is much more difficult to interpret, and is costly.

The Self-Perception Profile for Adolescents is an extension of the Self-Perception Profile for Children (Harter, 1985), which highlights the hierarchical nature of the self-evaluation process whereby self-esteem is viewed as a superordinate construct, and competence judgements in several skill domains represent lower order evaluative dimensions (Sugawara, 1986). The 45-item scale is constructed in the same way as Harter's earlier measure and yields eight subscale scores appropriate to adolescents, as well as a global self-worth score.

Studies Relating Self-Perception to Reproductive Knowledge

Crosby (1971) evaluated the effects of sexuality education on the self concept of adolescents. Using an experimental design and a 50-item self-esteem test, he found that the self-esteem of experimental subjects increased, while it remained the same for control subjects. The increase was just significant however, at the .05 level, and would not have been significant if a two-tailed test of significance had been used (Kirby, 1984). The methodological flaws in his research make it impossible to generalize to any population outside of his sample. Crosby taught the sexuality education classes, using a book that he co-authored, designed the measures of knowledge and self-concept and did not test any other subjects to see if his results were valid. Klein

(1982) found that about one year after completing a sexuality education course, senior high school students claimed that they had a better understanding of their emotional needs, their long-term goals, their sexual feelings, and their bodies.

Measures of Socioeconomic Status

Hollingshead's Two Factor Index of Social Position has been the most extensively used index of Socioeconomic Status (SES) in developmental research, although its use has diminished in sociology (Gottfried, 1985). The major criticisms of the Two Factor Index as noted by Mueller & Parcel (1981) are that it is outdated, and that the small number of categories in the occupational system does not cover the 450 occupations listed in the 1970 Census. In 1975 Hollingshead updated his index, now known as the Four Factor Index of Social Status. It is based on the assumption that social status is a multidimensional concept. The four factors are occupation, education, marital status, and gender, although gender is not entered into the computation (Hollingshead, 1975). The Four Factor Index of Social Status was used for this research.

Summary

Research on sexuality education has generally been focused on justifying sexuality education and describing the controversy surrounding it. Only recently have researchers addressed the evaluation needs of programs, the retention of

knowledge gained in these classes, and the relation of that knowledge to areas such as self-perception, achievement, and competence. The research on self-perception is voluminous, and has a history well founded in both the psychology and sociology literature. Little research has attempted to examine the relation between the self-perception and reproductive knowledge. This study does examine this relation and avoids some of the major methodological errors found in other studies of this sort.

Chapter 3

Methodology

Population and Sample

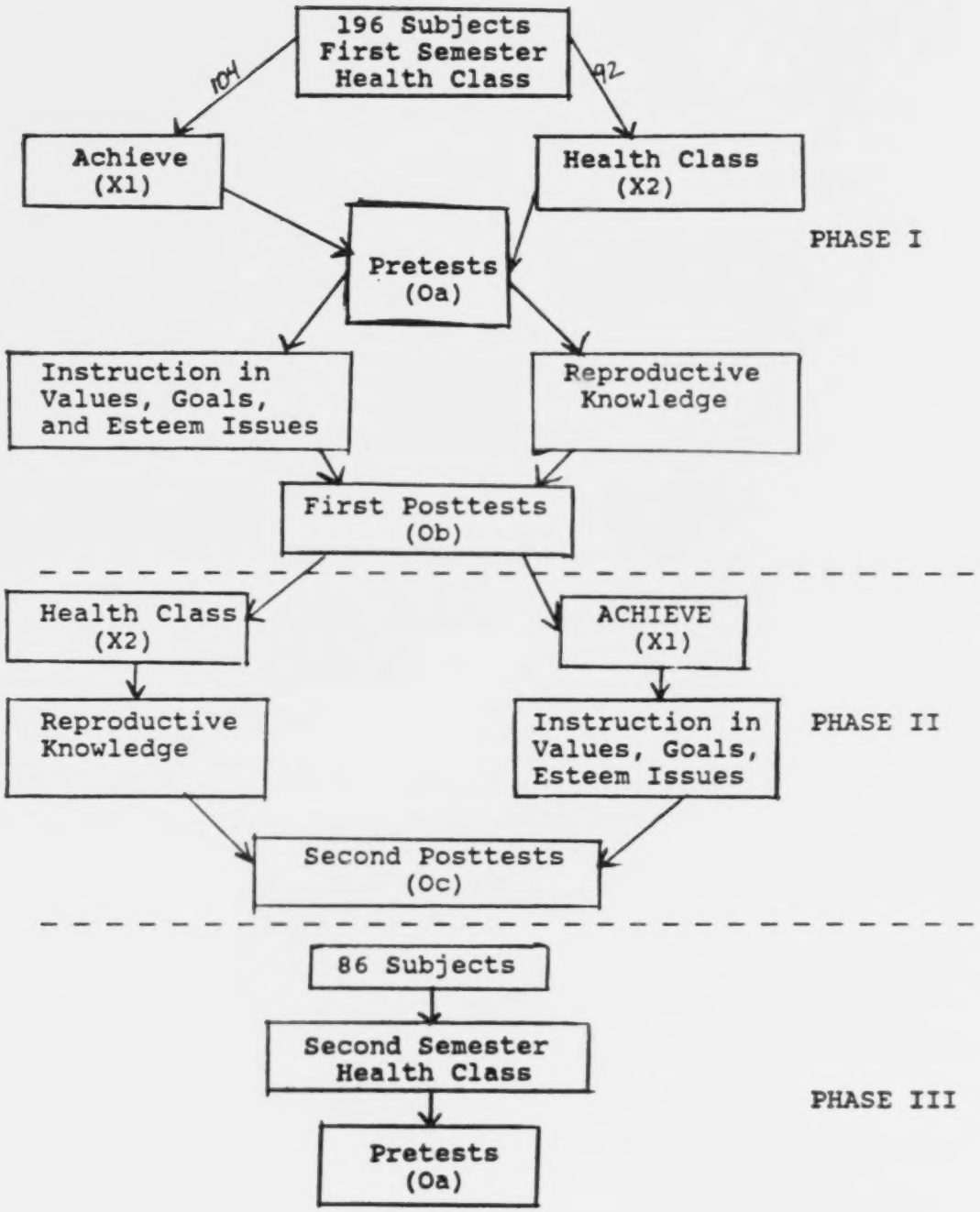
The population targeted for this study was high school students in a suburban area. This population included the individuals most affected by sexuality education classes and policy. After researching the health classes offered in Santa Cruz County, California during 1985, it was found that one particular high school addressed issues of self-perception separately in its health class. The teachers of that class were approached to gain their support for the project. Since the program was new and controversial, they welcomed the opportunity for publicity and evaluation. With their support, the principal of the school was approached in June, 1986. She obtained school board approval and gave her cooperation and endorsement to the project.

All students planning to take the required health class during the academic year 1986-1987 were included in the subject pool. They were randomly assigned to take the class during the first or second semester, since ethical and political considerations required that all students be given access to the class. Of those students, 104 were put into the three experimental classes receiving the ACHIEVE portion of the health class during the first nine weeks of the semester. Another 92 students were placed in the three experimental classes receiving the health portion of the

class during the first half of the semester. The remaining 86 students formed the control group, that took the class during the second semester (see Figure 3.1).

The subjects were 282 students (160 males and 122 females), ranging in age from 13 to 19, with a mean age of 15.6 years. The socioeconomic backgrounds of the subjects' parents were as follows: 15.2% low economic status; 66% medium socioeconomic status; and 18.8% high socioeconomic status. The ethnic composition of the total sample was 77.6% white, 12.6% Hispanic or Mexican American, 3.8% Black, 2.3% Other, 1.9% Asian, and 1.9% American Indian.

During the first week of the class the researcher explained the project to the students (see procedure section of this chapter). The students were asked to complete a questionnaire to obtain demographic information. They were also given an information letter, family information questionnaire, and Consent to Act as Human Subject form and asked to take it to their parents (see Appendix A). These forms were enclosed in an envelope addressed to each parent, and could be returned to the teacher, or mailed in the stamped, self-addressed envelope provided by the researcher. The following week, the pretest was administered by the classroom teachers and the researcher had no access to these tests until permission had been received from the subject's parents. The total number of males and females, as well as the number of subjects that took each test, is presented in Table 3.1.



Total Sample = 282

Figure 3.1. Sample Diagram

Self-Perception Profile

	Males	Females	Group 1	Group 2	Group 3
(A) Pretest	134	102	94	76	66
(B) Posttest	90	59	68	81	-
(C) Delayed Posttest	88	70	95	63	-

General Reproductive Knowledge Test

	Males	Females	Group 1	Group 2	Group 3
(A) Pretest	134	103	93	74	70
(B) Posttest	92	64	64	92	-
(C) Delayed Posttest	91	71	100	60	-

Table 3.1. Subjects by Gender, Group, and Test Administration

Measures

Self-Perception

Harter's (1986) Self-Perception Profile for Adolescents was used to measure various dimensions of self-perception. (See Appendix B.) This instrument is an extension of the Self-Perception Profile for Children (1982, 1985). The earlier scales are based on the assumption that an instrument which provides separate measures of one's competence or adequacy in different domains, as well as an independent assessment of global self-worth, would provide a richer understanding than instruments providing only a single self-concept score (Harter, 1986). Three new subscales were added to make the measure appropriate for adolescents: job competence, romantic appeal, and close friendship. The subscales of the adolescent version are:

Scholastic Competence
Social Acceptance
Athletic Competence
Physical Appearance
Job Competence
Romantic Appeal
Conduct/Morality
Close Friendship
Global Self-Worth

The 45-item scale (5 items per subscale) does not require subjects to select responses that are socially undesirable. Respondents first decide which kind of person is most like him or her, and are then asked whether this is only "sort of true" or "really true" for him or her. The effectiveness of this format lies in the implication that half of the respondents view themselves in one way, whereas the other half view themselves in the opposite manner. That is, this type of question legitimizes either choice. (See Figure 3.2 for an example of the question format.)

The Self-Perception Profile for Adolescents is scored either 4, 3, 2, or 1, where 4 represents the most adequate

Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
[4]	[3]	Some teenagers have a lot of friends.	BUT	Other teenagers don't have very many friends.	[2]	[1]

Figure 3.2. Self-Perception Profile Format Sample

self-judgement and 1 represents the least adequate self-judgement. Items within each subscale are counter-balanced so that items with the most adequate self-judgement are found on the left as often as on the right side of the page. The score given to each subject consists of nine subscale means which define the adolescent's self-perception profile.

Psychometric Properties

Internal Consistency Reliability

The internal consistency reliabilities for all nine subscales, as well as the split half Spearman-Brown, for each test administration are presented in Table 3.2. These reliabilities were based on Cronbach's Alpha. The reliabilities for most of the subscales are quite acceptable. The conduct/morality subscale shows somewhat lower reliability and may need revision. The job competence subscale also has lower reliability. Since some of the items in that subscale assume that the subject has been or is currently employed, unemployed students may have been unsure how to answer.

Means and Standard Deviations

The subscale means and standard deviations, presented by gender and test administration, are presented in Tables 3.3 and 3.4. In general the means fluctuate around a value of 14, which is above the midpoint of the scale. The most systematic differences were associated with gender. There was also some sample variation. The majority of the stan-

	Pretest (A) N = 235	Posttest (B) N = 148	Delayed Posttest (C) N = 158
Scholastic Competence	.69	.75	.74
Social Acceptance	.70	.72	.77
Athletic Competence	.84	.87	.91
Physical Appearance	.78	.77	.83
Job Competence*	.42	.43	.40
Romantic Appeal*	.63	.69	.72
Conduct/ Morality	.45	.39	.55
Close Friendship*	.58	.69	.71
Global Self-Worth	.65	.73	.74
Split-half Reliability (Spearman-Brown formula)			
First Half	.75	.79	.82
Second Half	.75	.81	.81
Total	.88	.91	.91

*These subscales were added to the measure to make it appropriate for adolescents.

Table 3.2. Self-Perception Profile Subscale Reliabilities by Test Administration

dard deviations fell between two and four indicating considerable variation among individuals.

Table 3.5 illustrates analysis of variance results that

Subscale	Male	Female	Group 1	Group 2	Group 3
Scholastic Competence					
(A) Pretest	14.7	14.6	14.2	14.9	15.1
(B) Posttest	14.9	14.9	15.1	14.8	-
(C) Delayed Posttest	15.1	14.8	14.8	15.2	-
Social Acceptance					
(A) Pretest	15.1	15.1	15.1	15.0	15.2
(B) Posttest	15.2	15.7	15.5	15.3	-
(C) Delayed Posttest	15.3	15.8	15.8	15.1	-
Athletic Competence					
(A) Pretest	15.2	12.0	13.9	13.9	13.7
(B) Posttest	15.0	12.5	14.4	13.7	-
(C) Delayed Posttest	15.3	12.2	14.3	13.3	-
Physical Appearance					
(A) Pretest	14.2	12.3	12.9	14.1	13.3
(B) Posttest	13.8	12.9	13.7	13.3	-
(C) Delayed Posttest	14.3	13.2	13.7	14.0	-
Job Competence					
(A) Pretest	15.9	15.9	15.8	16.4	15.3
(B) Posttest	15.8	16.7	16.3	16.0	-
(C) Delayed Posttest	15.9	17.2	16.4	16.7	-
Romantic Appeal					
(A) Pretest	12.7	12.4	12.5	12.1	13.1
(B) Posttest	12.7	12.4	12.9	12.2	-
(C) Delayed Posttest	13.4	13.0	13.6	12.7	-
Conduct/Morality					
(A) Pretest	13.3	13.4	13.0	14.0	13.0
(B) Posttest	13.9	14.4	14.0	14.1	-
(C) Delayed Posttest	14.2	14.1	13.9	14.6	-
Close Friendship					
(A) Pretest	15.6	17.1	16.5	16.1	16.0
(B) Posttest	14.9	17.0	16.2	15.4	-
(C) Delayed Posttest	15.3	17.3	16.5	15.8	-
Global Self-Worth					
(A) Pretest	15.4	14.7	14.9	15.7	14.6
(B) Posttest	15.6	15.3	15.5	15.5	-
(C) Delayed Posttest	15.6	15.3	15.3	15.8	-

Table 3.3. Self-Perception Profile Subscale Means by Gender, Group and Test Administration

Subscale	Male	Female	Group 1	Group 2	Group 3
Scholastic Competence					
(A) Pretest	3.0	3.6	3.3	3.3	3.1
(B) Posttest	3.1	3.6	3.2	3.4	-
(C) Delayed Posttest	3.1	3.7	3.1	3.8	-
Social Acceptance					
(A) Pretest	2.7	2.9	2.6	3.2	2.4
(B) Posttest	3.0	3.0	2.8	3.2	-
(C) Delayed Posttest	2.4	3.4	2.7	3.0	-
Athletic Competence					
(A) Pretest	3.2	3.5	3.5	4.2	3.3
(B) Posttest	3.5	4.4	3.8	4.3	-
(C) Delayed Posttest	3.4	4.0	3.6	4.4	-
Physical Appearance					
(A) Pretest	3.0	3.4	3.2	3.4	3.2
(B) Posttest	2.9	3.5	2.8	3.4	-
(C) Delayed Posttest	3.1	4.1	3.5	3.8	-
Job Competence					
(A) Pretest	2.5	2.7	2.4	2.7	2.8
(B) Posttest	2.4	2.4	2.4	2.5	-
(C) Delayed Posttest	2.4	2.5	2.5	2.4	-
Romantic Appeal					
(A) Pretest	2.7	3.0	2.8	3.0	2.5
(B) Posttest	3.0	3.4	3.1	3.2	-
(C) Delayed Posttest	2.9	3.7	3.1	3.5	-
Conduct/Morality					
(A) Pretest	2.7	2.7	2.6	2.8	2.6
(B) Posttest	2.1	2.7	2.5	2.3	-
(C) Delayed Posttest	2.3	2.8	2.4	2.6	-
Close Friendship					
(A) Pretest	3.1	3.0	2.9	3.4	3.1
(B) Posttest	3.1	3.5	3.3	3.5	-
(C) Delayed Posttest	3.0	3.4	3.1	3.6	-
Global Self-Worth					
(A) Pretest	3.0	3.4	3.5	3.0	2.9
(B) Posttest	2.7	3.3	2.9	3.0	-
(C) Delayed Posttest	2.6	3.6	3.2	2.9	-

Table 3.4. Self-Perception Profile Subscale Standard Deviations by Gender, Group and Test Administration

indicate boys saw themselves as significantly more

athletically competent than girls across test administrations. In contrast, girls perceived themselves as better able to develop and maintain close friendships. They also perceived more job competence in posttest administrations. On the pretest, boys liked their physical appearance more than girls. This effect was not obtained in the posttests.

Factor Pattern

In Table 3.6, the principal component factor pattern for all nine subscales is presented, by test administration.

Subscale	N	Male Mean	Female Mean	F Value
Athletic Competence				
(A) Pretest	236	15.2	12.0	51.8*
(B) Posttest	149	15.0	12.5	15.8*
(C) Delayed Posttest	158	15.3	12.2	26.0*
Close Friendship				
(A) Pretest	236	15.6	17.1	14.6**
(B) Posttest	149	14.9	17.0	14.3**
(C) Delayed Posttest	158	15.3	17.3	15.6*
Job Competence				
(A) Pretest	-	-	-	-
(B) Posttest	149	15.8	16.7	4.8****
(C) Delayed Posttest	158	15.9	17.2	11.9***
Physical Appearance				
(A) Pretest	236	14.2	12.3	27.8*
(B) Posttest	-	-	-	-
(C) Delayed Posttest	-	-	-	-

*p < .0001 **p < .0002 ***p < .0007 ****p < .05

Table 3.5. Significant Gender Effects on Self-Perception Profile Subscales

(See Appendix C for factor loadings on other subscales.) An oblique rotation was performed, allowing the factors to intercorrelate, since there is some relation between these dimensions of self-perception. The factor pattern was very clear and showed that each of the subscales defined a unique factor. The scholastic competence factor is the first subscale (factor) presented in Table 3.6. It includes items 1, 10, 19, 28, and 37 from the Self-Perception Profile. In column (A), the factor loadings for each item are listed as they loaded on this factor for the pretest. All values fall between .67 and .79, and define a unique factor.

Intercorrelations Among Subscales

The intercorrelations among the nine subscales for each test administration are presented in Table 3.7. Several patterns are of interest. First, among the domain-specific subscales, physical appearance was related to athletic competence and romantic appeal. While it is impossible to infer causality, it seems likely that adolescents who like their physical appearance feel more athletically competent and romantically appealing. Conversely, those who do not like how they look feel they are less athletically inclined and more romantically unappealing. Romantic appeal and close friendship are both moderately correlated with social acceptance, indicating that greater romantic appeal and peer intimacy may lead to greater acceptance or popularity with other adolescents. Interestingly, scholastic and job com-

Subscale and Item Description	(A)	(B)	(C)
Scholastic Competence			
1. Just as smart	.70	.76	.64
10. Do schoolwork quickly	.68	.70	.75
19. Do well at classwork	.67	.59	.67
28. Can figure out answers	.79	.75	.79
37. Feel intelligent	.77	.75	.61
Social Acceptance			
2. Easy to make friends	.76	.68	.78
11. Have a lot of friends	.81	.74	.74
20. Easy to like	.48	.44	.56
29. Popular with others	.74	.79	.73
38. Socially accepted	.71	.76	.79
Athletic Competence			
3. Do well at sports	.85	.88	.86
12. Can do new sports	.83	.88	.91
21. Better at sports	.80	.82	.86
30. Good at new games	.76	.74	.82
39. Feel very athletic	.76	.74	.82
Physical Appearance			
4. Happy with looks	.77	.73	.79
13. Like their body	.71	.66	.71
22. Like appearance	.78	.73	.77
31. Good looking	.77	.70	.77
40. Like looks	.81	.79	.81
Job Competence			
5. Handle job	.77	.41	.57
14. Skills to do job	.71	.34	.86
23. Proud of work	.78	.45	.78
32. Good job for pay	.78	.66	.82
41. Getting job done important	.81	.77	.63
Romantic Appeal			
6. Others like them back	.70	.81	.69
15. Date people they are attracted to	.72	.87	.58
24. Others attracted to them	.73	.68	.75
33. Fun and interesting date	.32	.48	.63
42. Asked out by right people	.63	.43	.76
Conduct/Morality			
7. Do right thing	.54	.43	.41

16. Feel guilty	.86	.81	.86
25. Pleased with actions	.35	.36	.62
34. Don't do things they shouldn't	.55	.31	.45
43. Act way supposed to	.66	.62	.54
Close Friendship			
8. Make close friends	.73	.54	.53
17. Can be trusted	.20	.91	.82
26. Share with friends	.83	.75	.75
35. Make trusted friends	.71	.52	.60
44. Share thoughts	.83	.60	.64
Global Self-Worth			
9. Pleased with selves	.80	.76	.75
18. Like way they're leading their life	.79	.74	.74
27. Happy with themselves	.72	.68	.73
36. Like person they are	.68	.66	.66
45. Happy being this way	.67	.65	.62

Note: (A) Pretest
(B) Posttest
(C) Delayed Posttest

Table 3.6. Factor pattern for Self-Perception Profile Subscales by Test Administration

petence were the least correlated with any other subscale. Most of the subscales in Table 3.7 were less than moderately correlated (values under .50) with other subscales supporting the discriminant validity of the self-perception profile.

The correlations among each specific domain and self-worth are also of interest. Across the test administrations, physical appearance and conduct/morality are the most consistently correlated with global self-perception at moderate levels (most value's falling between .45 and .64). This implies that attractiveness and values are important to self-worth, however the directionality of these relationships warrants further study.

	SA	AC	PA	JC	RA	CM	CF	GS
SC								
(A)	.23	.18	.30	.29	.17	.34	.22	.35
(B)	.27	.30	.34	.27	.22	.44	.27	.54
(C)	.38	.34	.30	.24	.30	.30	.37	.44
SA								
(A)		.34	.33	.20	.38	.06	.40	.34
(B)		.43	.36	.35	.49	.20	.47	.48
(C)		.47	.39	.28	.58	.09	.58	.57
AC								
(A)			.47	.11	.31	.14	.03	.34
(B)			.42	.14	.36	.15	.13	.45
(C)			.49	.01	.45	.13	.20	.40
PA								
(A)				.24	.47	.26	.17	.62
(B)				.13	.44	.27	.21	.61
(C)				.17	.65	.32	.25	.64
JC								
(A)					.08	.30	.25	.34
(B)					.25	.29	.31	.35
(C)					.25	.15	.13	.31
RA								
(A)						-.02	.22	.31
(B)						.17	.39	.36
(C)						.22	.32	.53
CM								
(A)							.16	.50
(B)							.16	.45
(C)							-.02	.46
CF								
(A)								.32
(B)								.37
(C)								.33

Note:

SC = Scholastic Competence	CM = Conduct/Morality
SA = Social Acceptance	CF = Close Friendship
AC = Athletic Competence	GS = Global Self-Worth
PA = Physical Appearance	(A) Pretest
JC = Job Competence	(B) Posttest
RA = Romantic Appeal	(C) Delayed Posttest

Table 3.7. Intercorrelations Among Self-Perception Profile Subscales by Test Administration

General Reproductive Knowledge

General reproductive knowledge was measured using a teacher-generated test (henceforth referred to as the GRK). (See Appendix B.) Topics included in the GRK are anatomy and physiology; contraception; fetal development; pregnancy, abortion, adoption and birth; and sexually transmitted diseases. Subjects completed the 40-item measure, that included 24 multiple choice questions and 16 short-answer questions. Each question was worth two points if completely correct, and 0 points if incorrect. Partially correct answers were originally scored as 1, but changed to 0 for statistical analyses requiring dichotomous scores. There were a total of 80 points possible.

Psychometric Properties

Internal Consistency Reliability

The internal consistency reliabilities for each test administration are listed in Table 3.8. These reliabilities are based on Cronbach's Alpha, and the Spearman-Brown split-half reliability formula. The reliabilities were all acceptable.

Means and Standard Deviations

The means and standard deviations presented by gender and test administration are listed in Table 3.9. In general the pretest means fluctuated around 20, which is below the midpoint of the scale. The posttest means fluctuated around

	Cronbach's Alpha	Split-Half Spearman-Brown		
		First Half	Second Half	Total
(A) Pretest N = 237	.76	.62	.72	.55
(B) Posttest N = 156	.94	.80	.94	.90
(C) Delayed Posttest N = 162	.90	.67	.90	.80

Table 3.8. Reliabilities of the General Reproductive Knowledge Measure by Test Administration

37, which is also below the midpoint of the scale, and may indicate that the items were too difficult. There were differences associated with gender for each test administration. The standard deviations were all large, indicating considerable variation among individuals.

	Male	Female	Group 1	Group 2	Group 3
(A) Pretest					
Mean	19.0	22.3	20.4	19.2	21.9
SD	9.0	10.0	8.7	10.5	9.6
N = 237					
(B) Posttest					
Mean	35.4	42.3	20.6	50.6	-
SD	20.1	21.0	11.0	16.6	-
N = 156					
(C) Delayed Posttest					
Mean	42.4	48.8	50.0	37.4	-
SD	16.6	15.2	14.1	16.6	-
N = 162					

Table 3.9. General Reproductive Knowledge Means and Standard Deviations by Gender, Group and Test Administration

The most systematic effects obtained were for gender. Table 3.10 indicates that females consistently scored higher than males in each test administration.

Factor Pattern

The purpose of conducting a principle component factor-analysis of the GRK was to determine if the five topic areas constituted separate factors, and whether the factor pattern was replicable across test administrations. In other words, the factor-analysis contributed to the examination of the construct validity of the measure. Table 3.11 presents the factor pattern for the five topic areas of the GRK. A varimax rotation was performed, to obtain orthogonal relation between the topic areas. The factor loadings indicate that each area defines a unique factor, and that the factor pattern was replicated across test administrations.

Measure Administration

Subscale	N	Male Mean	Female Mean	F Value
(A) Pretest	237	19.0	22.3	6.7***
(B) Posttest	156	35.4	42.3	10.7*
(C) Delayed Posttest	162	42.4	48.8	8.1**

*p < .0014 **p < .0050 ***p < .010

Table 3.10. Gender Effects for the General Reproductive Knowledge Measure

Factor and Item Description	(A)	(B)	(C)
Anatomy and Physiology			
4. Menstrual Cycle	.53	.34	.37
5. Menstrual Symptoms	.48	.65	.66
6. Erection Facts	.59	.82	.63
9. Ovulation	.54	.49	.14
25. Gender Differences	.63	.57	.58
26. Abnormal Menstruation	.52	.58	.56
28. Scrotum Temperature	.63	.71	.75
29. Female Organs	.74	.64	.63
30. Female Organs	.77	.64	.59
31. Male Organs	.79	.80	.73
32. Male Organs	.75	.60	.47
Contraception			
8. Chances of impregnation	.58	.69	.46
10. Ovulation method	.62	.45	.79
11. Diaphram	.42	.59	.31
12. Condom/Foam	.78	.68	.75
13. Vasectomy	.46	.67	.55
14. Birth Control Pill	.36	.58	.59
33. Morning After Pill	.19	.67	.48
34. Reasons Methods Fail	.45	.76	.61
Pregnancy, Abortion and Birth			
21. Second Stage of Labor	.84	.45	.63
22. Aspiration Abortion	.49	.43	.41
23. Abortion Methods	.68	.67	.56
24. Abortion Fallacies	.69	.78	.65
27. Symptoms of Pregnancy	.57	.52	.47
37. Symptoms of Pregnancy	.60	.59	.49
39. Abortion Debate	.44	.68	.45
40. Human Life Amendment	.47	.51	.29
Sexually Transmitted Diseases			
15. Methods of Prevention	.50	.50	.51
16. Symptoms of STDs	.62	.58	.77
17. Cause of AIDS	.28	.53	.25
18. Bacterial STDs	.28	.50	.62
35. Treatment of STDs	.67	.63	.69
36. Effects on Development	.59	.64	.46
Fetal Development			
1. Embryonic Development	.46	.54	.50
2. Function of Uterus	.43	.34	.68
3. Embryonic Development	.17	.23	.66
7. Circumcision	.40	.69	.52
19. Third Trimester	.61	.55	.56
20. Development	.52	.35	.34
38. First Trimester	.16	.55	.55

(A) Pretest (B) Posttest (C) Delayed Posttest

Table 3.11. Factor pattern for General Reproductive Knowledge Measure by Topic Area and Test Administration

Both tests were administered unannounced to the experimental subjects in the second, tenth, and eighteenth weeks of the semester. In addition, the subjects in the control group took the measures during the second week of the second semester. A small percentage of students were absent from class during each test administration, but this percentage appears random, and is not significant.

Pilot Studies

To determine the appropriateness of the measurement instruments considered for this paper, a number of pilot studies were conducted prior to the completion of the research proposal. Eighty subjects ranging in age from 13 to 50 years were asked to complete the Coopersmith Self-Esteem Inventory. The results are presented in Figure 3.3. The results were well beyond the normative data provided in the Coopersmith manual. The scores on the measure range from 0 to 100, and are based on responses to 25 items that ask if a descriptive statement is "like" or "unlike" the subject. The normative average for the inventory was 66, and the pilot study average was 88. In addition, the test can only be interpreted to reflect low, medium or high self-esteem. Based on these results, the Coopersmith Inventory was not used in the final research.

To test its appropriateness for the study, a sample of eight adults were asked to take the Tennessee Self-Concept Scale. The test takes from 10 to 40 minutes to administer

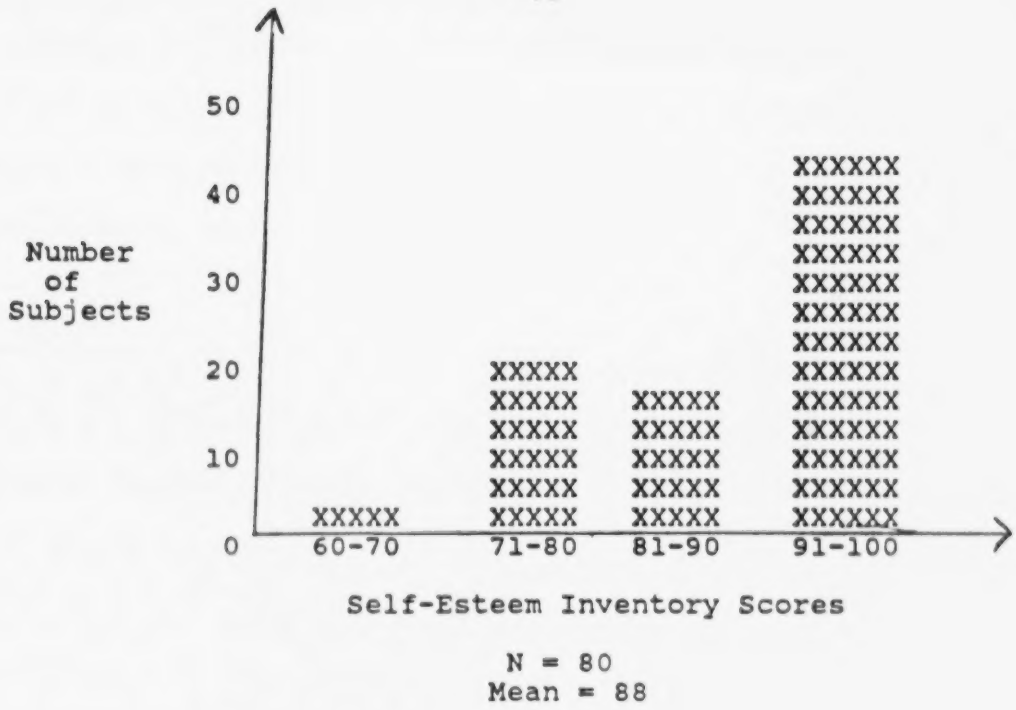


Figure 3.3. Range of Pilot Study Scores on the Self-Esteem Inventory

and at least one-half hour to score, providing very rich and detailed information about the subjects. The cost of the measure, however, made it impossible to use in the study.

Finally, the GRK and SPP measures were pilot tested. They were administered to 50 adolescents who had never taken a health class, ranging in age from 13 to 19. No other information was obtained for any subject. The scores were normally distributed and supported the assumption that a range of scores would be obtained on the various subscales of the SPP, and that adolescents have little reproductive knowledge prior to taking a health class.

Research Procedures

The subjects were introduced into the study during the

first week of the semester. The students were told that the school wanted to evaluate the health education program and felt that their input would be the most valuable. The first class period was spent talking with students about the topics that should be included in health classes. At the end of the discussion, the students were informed that they would be taking six tests during the semester (three "What Am I Like?" measures and three GRK tests). These tests were to be given during class time, and the GRK would be the final exam in the health class.

Parents who indicated on the family information questionnaire that they wanted to be notified of the results will be sent a letter in the summer of 1987 describing the results of the study.

Statistical Design

The research used a counter-balanced experimental design which included administering pretests, posttests and delayed posttests (as dependent variables). The independent variable of this study was group (defined by which nine-week portion of the health class was taken first). The subject matter in the health portion was reproductive knowledge and the subject matter in the ACHIEVE portion was self-esteem and how it effects personal wellbeing, scholastic success and family relationships. Demographic data for future research was collected on students and parents using questionnaires. Figure 3.4, using Campbell and Stanley notation

(1963), represents the statistical design.

Data Analysis

The Statistical Analysis System (SAS) was used for all data analysis, except for reliability procedures which were done with the Statistical Package for the Social Sciences (SPSS). Analysis of Covariance (ANCOVA) was used to test the hypotheses specified in Chapter 1. ANCOVA was used to take into account the initial differences between the groups and the correlation of the initial measure and the dependent variable. The critical alpha was set at $p < .05$. The first model used the posttest self-perception subscale score as the dependent variable and the pretest score on the self-perception measure as the covariate. The second model used the GRK posttest score as the dependent variable and the GRK pretest score as the covariate. These models were repeated using the delayed posttest scores, on both measures, as the dependent variables. Homogeneity of regression was tested for in each model prior to conducting the analysis of

Group	Phase I			Phase II		Phase III	
1	R	Oa	X1 Ob	X2	Oc		n=104
2	R	Oa	X2 Ob	X1	Oc		n=92
3	R					Oa	n=86

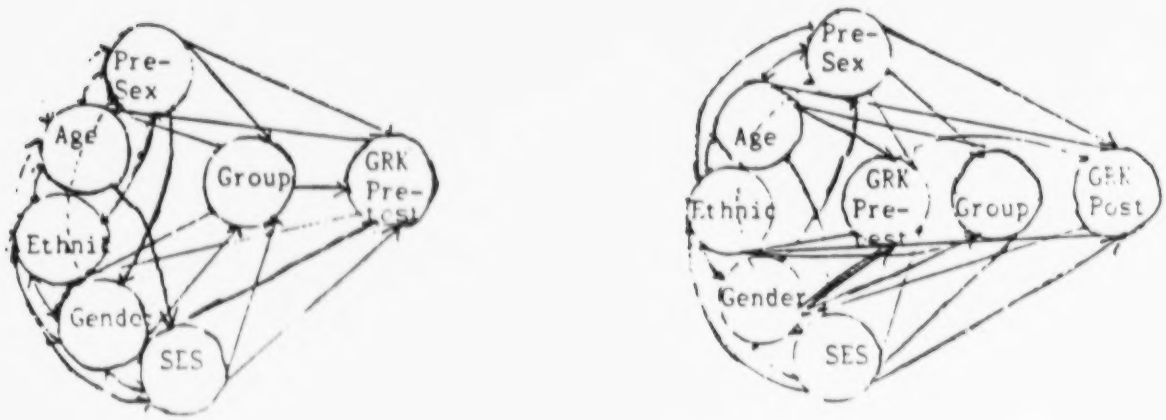
N = 282; R = Random assignment; Oa = SPP and GRK pretest; Ob = SPP and GRK posttest; Oc = SPP and GRK delayed posttest; X1 = subjects taking ACHIEVE; X2 = subjects taking health.

Figure 3.4. The Experimental Design

covariance procedures. The procedures were conducted only on models without interaction terms. Interactions were analyzed separately using post hoc tests.

Four different causal models were considered. The two models considered for each of the measures are presented in Figure 3.5. Standardized beta weights were estimated using multiple regression. The analysis required that each endogenous variable be regressed on all exogenous variables in the model. All variables were entered into the equation in temporal order. The result of the structural equation yielded a standardized regression (beta) weight. The size and sign of the standardized regression weight indicated the amount of positive or negative change in the dependent measure for every unit of standard deviation increase in the predictor variable, holding constant the influence of all other predictors in the equation.

Models Considered for General Reproductive Knowledge Analysis



Models Considered for Self-Perception Profile Analyses

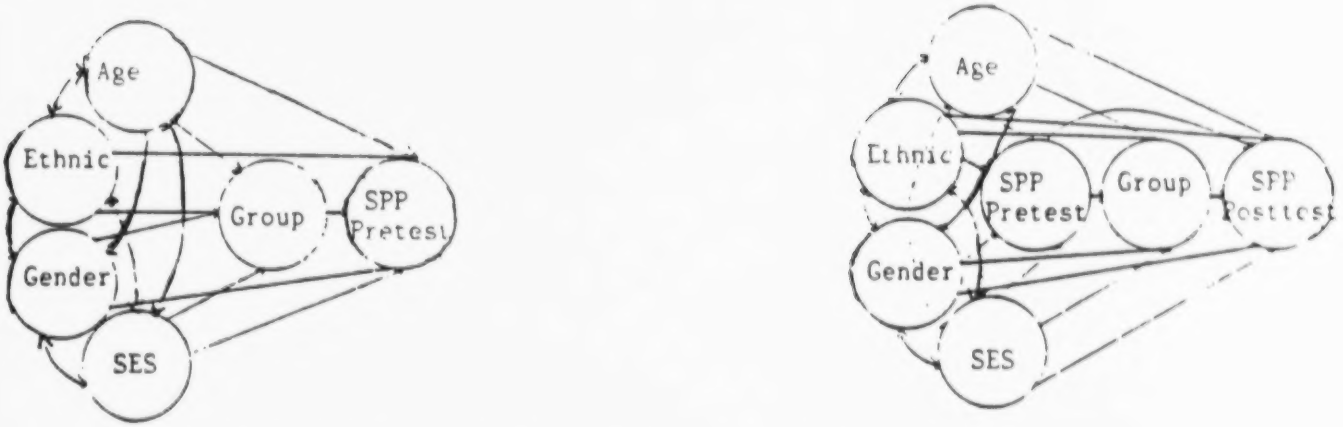


Figure 3.5. Samples of Causal Models Considered

Chapter 4

Results

The data were analyzed in two ways: the hypotheses for each phase of the study were tested with analysis of covariance (ANCOVA); and path analysis models were explored with regression equations. The results are presented in that sequence.

Analysis of Covariance

Phase I

The experimental groups did not differ on pretest scores for either measure. The first null hypothesis (there will be no difference in the posttest mean scores of either measure between adolescents who have taken the sexuality portion of the health class first and those who have taken the ACHIEVE portion first) was rejected for only the GRK. The analysis of the GRK posttest scores revealed a significant effect for group, $F = 236.12$, $p < .0001$. Table 4.1 presents the results from that analysis of covariance, as well as the adjusted mean for each group. Figure 4.1 graphs the change in mean scores across all three phases of the study. It is obvious that group 2, which took the sexuality portion of the health class first, scored significantly higher on the General Reproductive Knowledge posttest than group 1, which took the ACHIEVE portion first.

In individual tests for parallel regression lines, a significant interaction for gender was identified on the

Covariate	N	Adjusted Means	R-Square	df	F Value
GRK (Pretest)	125		.69	1	31.07*
Group				1	236.12*
1		19.38			
2		52.92			

*p < .001

Table 4.1. Mean Score Comparison for General Reproductive Knowledge (GRK) Posttest by Group

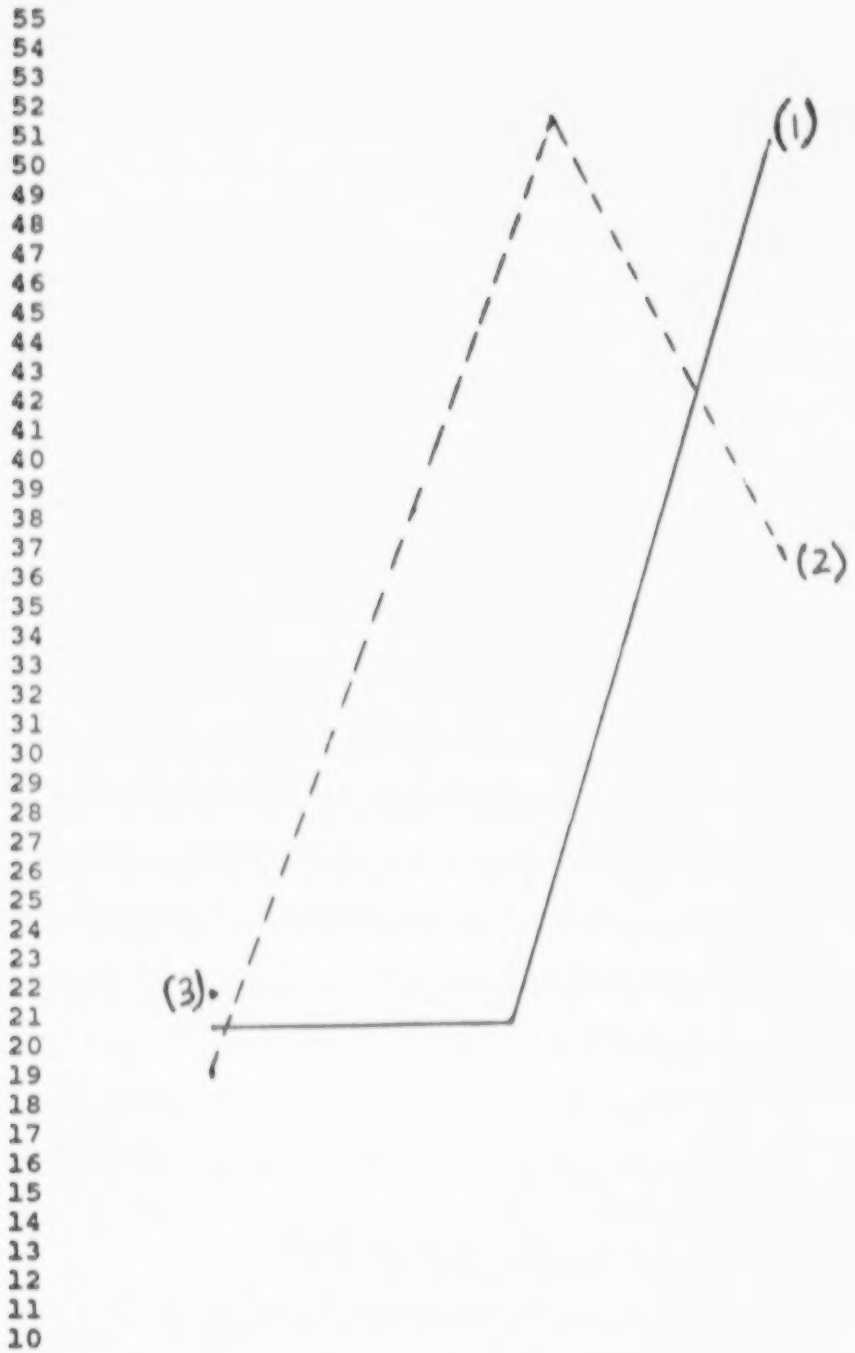


Figure 4.1. General Reproductive Knowledge Mean Score Comparison by Group

athletic competence ($F = 7.63$, $p < .007$), close friendship ($F = 7.82$, $p < .006$), and global self-worth subscales ($F = 4.91$, $p < .03$). Post hoc exploration (Scheffe) indicated that girls who had lower self-perception in these three subscales also had a more positive self-perception after having taken the ACHIEVE portion of the class, whereas the male subjects' scores were more stable. The analysis of the Self-Perception Profile posttest scores revealed no significant differences between the groups. There were significant main effects for ethnicity on both the romantic appeal, $F = 3.22$, $p < .009$, and close friendship, $F = 3.14$, $p < .0107$, subscales. There was also a significant main effect for grade level, $F = 3.85$, $p < .0239$, on the physical appearance subscale. The tables reporting these results are found in Appendix D, along with charts comparing means for group and gender on all subscales. These results will not be discussed in this report, as they were not hypothesized prior to conducting the analyses. However, these results indicate that the self-perception of the subjects did not change as much as their general reproductive knowledge, regardless of which portion of the health class they took first.

Phase II

The second null hypothesis (there will be no difference between mean scores immediately after taking each portion of the health class and delayed posttest mean scores nine weeks later) was rejected for both measures. There was a signifi-

cant effect for group on the delayed GRK posttest, F = 105.67, p < .0001. Table 4.2 presents the analysis of covariance results as well as the adjusted means on the delayed GRK posttest for each group. Subjects who had just taken the sexuality portion of the health class scored approximately 33 points higher on the GRK than those who had taken the sexuality portion nine weeks earlier. Within nine weeks, students in Group 1 had lost almost 50% of the reproductive knowledge they gained in the class. There was also a significant effect for gender, F = 5.96, p < .02, which is presented in Appendix D, as it was not hypothesized.

Individual tests for parallel regression lines resulted in significant (F = 6.94, p < .009) interactions for group in the romantic appeal subscale. Post hoc tests (Scheffe) indicated that subjects perceived themselves as more romantically appealing if they had taken the sexuality portion of the health class prior to the ACHIEVE portion. There was a significant main effect on the conduct/morality subscale of

Covariate	N	Adjusted Means	R-Square	df	F Value
GRK (Posttest)	121		.47	1	.11
Group				1	105.67*
1		62.03			
2		28.90			

*p < .0001

Table 4.2. Mean Score Comparison for the General Reproductive Knowledge Delayed Posttest by Group

the SPP by group, $F = 3.89$, $p < .05$, which is presented in Table 4.3. Post hoc analysis (Scheffe) indicated that those students who had taken the ACHIEVE portion of the class first lost the mean score gain on this subscale when tested nine weeks later. In other words, their perception of their conduct and morality had increased during the ACHIEVE portion of the class, but had decreased again, within nine weeks. There were also main effects for ethnicity on the conduct/morality subscales, $F = 2.43$, $p < .04$, such that minority students scored higher than white students, as well as the social acceptance subscale, $F = 2.69$, $p < .02$, which replicated that result. In addition, there was a main effect for age, $F = 3.92$, $p < .003$, on the close friendship subscale. The global self-worth subscale was mainly affected by grade level, $F = 7.05$, $p < .001$, with younger students having more positive global self-perceptions, and there was a main effect for gender on the conduct/morality subscale, $F = 5.55$, $p < .02$, and female students scored more positively. The results of these unhypothesized analyses are presented in Appendix D.

Phase III

The mean scores on both measures for the experimental and control groups were not significantly different. Based on this finding, the hypothesis for Phase III of the design (the mean pretest scores on both measures will not be significantly different between the experimental and control

Covariate	N	Adjusted Means	R-Square	df	F Value
BSPPCMT (Posttest)	120		.50	1	110.88*
Group				1	3.89**
1		14.09			
2		14.73			

*p < .0001 **p < .05

Table 4.3. Mean Score Comparison on Delayed Posttest of the Conduct/Morality Subscale (Self-Perception Profile)

groups) was not rejected. This indicated that the experimental groups in the first semester were from the same population as the control group, and that the validity of the results was not affected simply by the maturation of the students.

Path Analysis

General Reproductive Knowledge Test

Preliminary analyses of both models (see Figure 3.4) considered for predicting the general reproductive knowledge of students were conducted using regression equations. The shortened model, leaving out group as a variable, accounted for only 15% of the variance in that model, indicating that the model would be a poor predictor of the endogenous variable. The variables operationalized in Figure 4.2 accounted for 64% of the variance and yielded statistically significant gender and socioeconomic differences in the prediction of both pretest and posttest scores on the General Reproductive Knowledge Test (see Table 4.4 for regression results

and Figure 4.3 for full path analysis).

Not surprisingly, the greatest positive effect--other than group--on both the pretest and posttest scores was socioeconomic status. The higher the socioeconomic status of the family the greater the score on the GRK pretest and posttest. The next largest positive effect was gender.

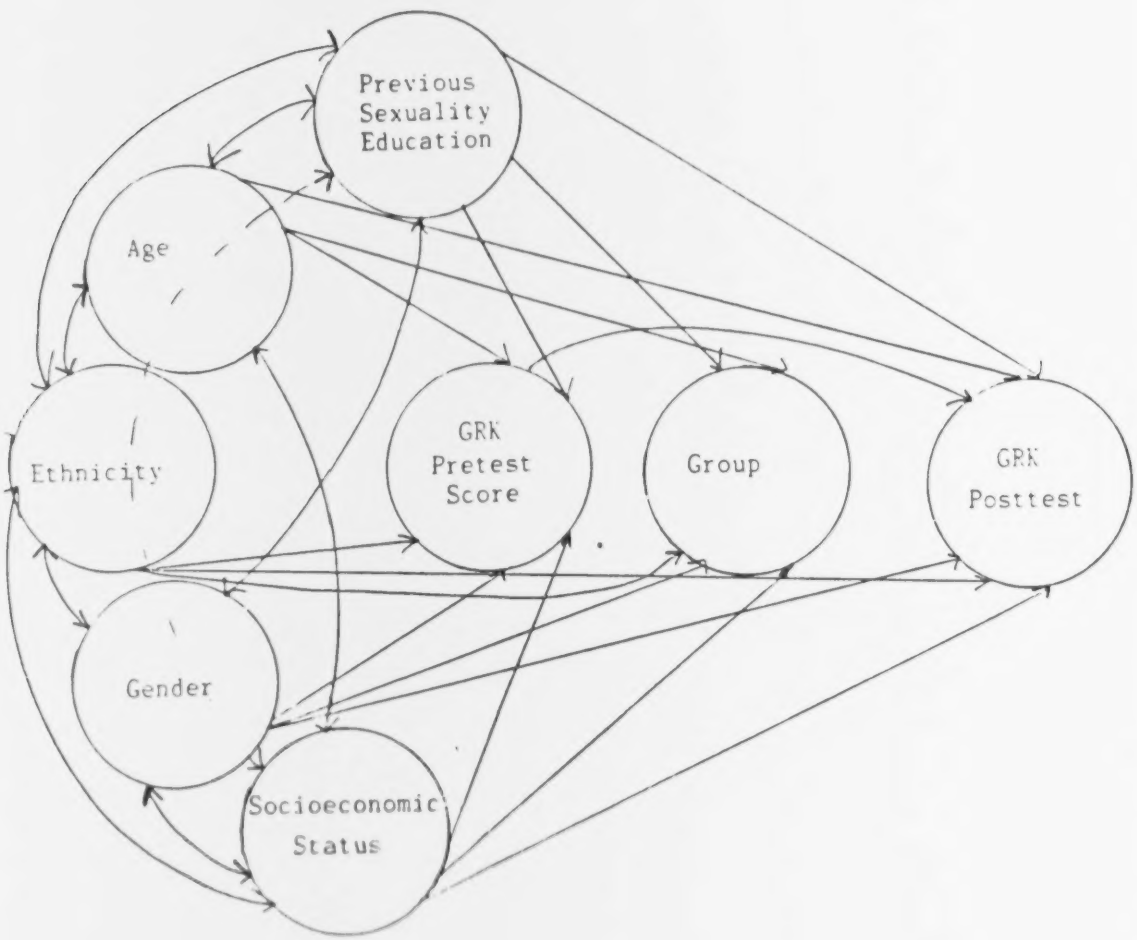


Figure 4.2. Model Used in General Reproductive Knowledge Regression Analysis

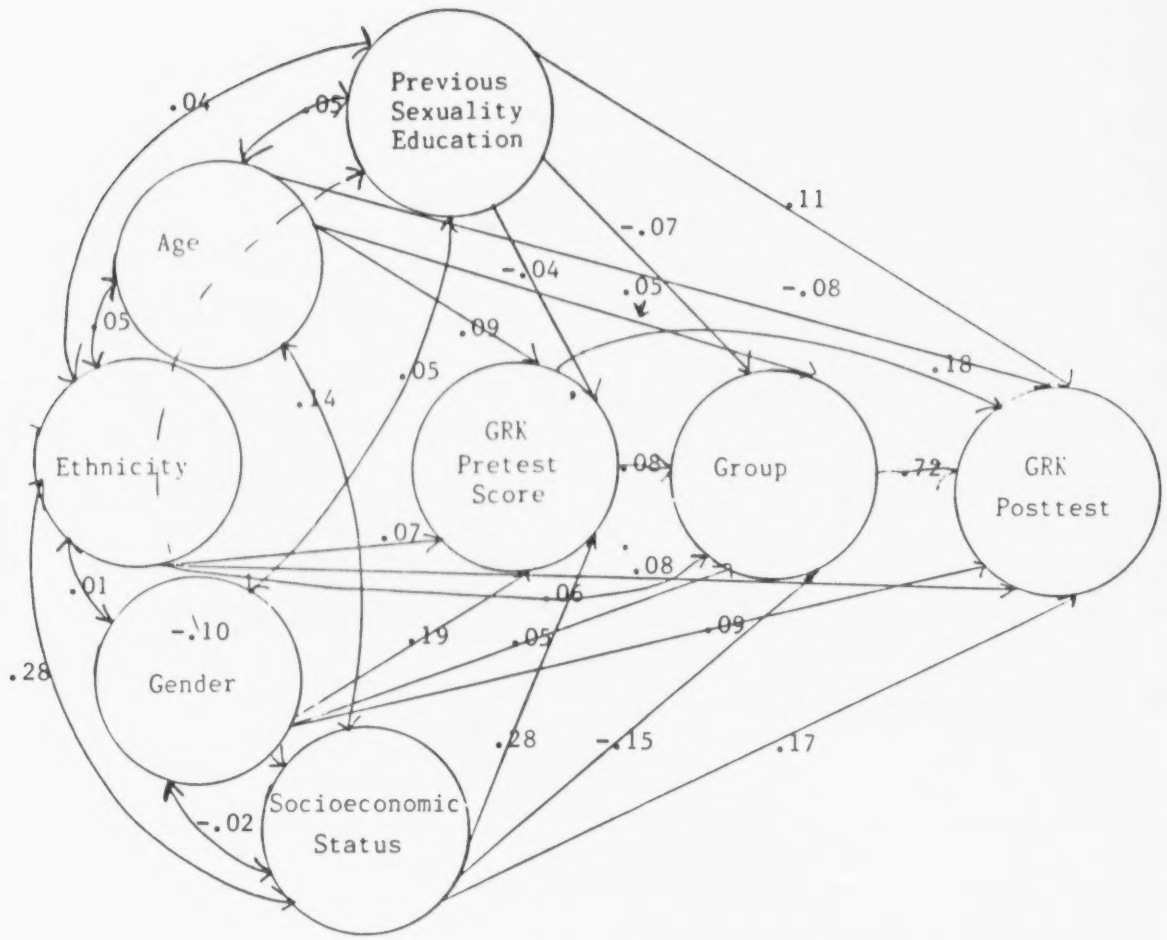


Figure 4.3. Full Path Analysis of GRK Posttest Scores

Independent Variables	Dependent Variables: GRK Posttest	Group	GRK Pretest
Group			
b	.72***		
se	1.34		
GRK Pretest			
b	.18**	.08	
se	.12	.01	
PreSex			
b	.11	-.07	-.04
se	2.32	.14	1.60
Age			
b	-.08	.05	.09
se	1.13	.07	.78
Ethnicity			
b	.06	.08	.07
se	.72	.05	.50
Gender			
b	.09	.05	.19*
se	2.16	.13	1.47
SES			
b	.17*	-.15	.28**
se	.09	.01	.06

*p < .05 **p < .001 ***p < .0001

b = Standardized beta weight
se = Standard error

Correlations

	Age	Ethnicity	Gender	SES
Ethnicity	.05			
Gender	-.07	.01		
SES	.14	.28	-.02	
Group	.05	.04	.05	-.10

Table 4.4. Regression Analysis of General Reproductive Knowledge Posttest and Correlations of Independent Variables

Girls consistently began with, as well as gained and retained, more reproductive knowledge.

Self-Perception Profile

Preliminary analyses of both models considered for predicting self-perception were conducted using regression equations. The shortened model, leaving out group, accounted for only 8% of the variance in that model, indicating that the group variable was an important one. The variables operationalized in Figure 4.4 accounted for between 16% and 75% of the variance and yielded many statistically significant differences in the prediction of both the pretest and posttest scores on all nine subscales of the Self-Perception Profile for Adolescents.

The only subscales that indicated any difference between experimental groups were scholastic competence, romantic appeal, and physical appearance. Both predicted that students who had taken the ACHIEVE portion of the health class first would have more positive self-perceptions than those who had not. The remainder of these results are from analyses not hypothesized prior to conducting the analysis. In contrast to the GRK--which was best predicted by the socioeconomic status of the family--gender, ethnicity and age were the strongest predictors (after pretest scores) of the SPP subscales. Figures 4.5 through 4.13 present each path analysis on the subscales, and are summarized below by predictor.

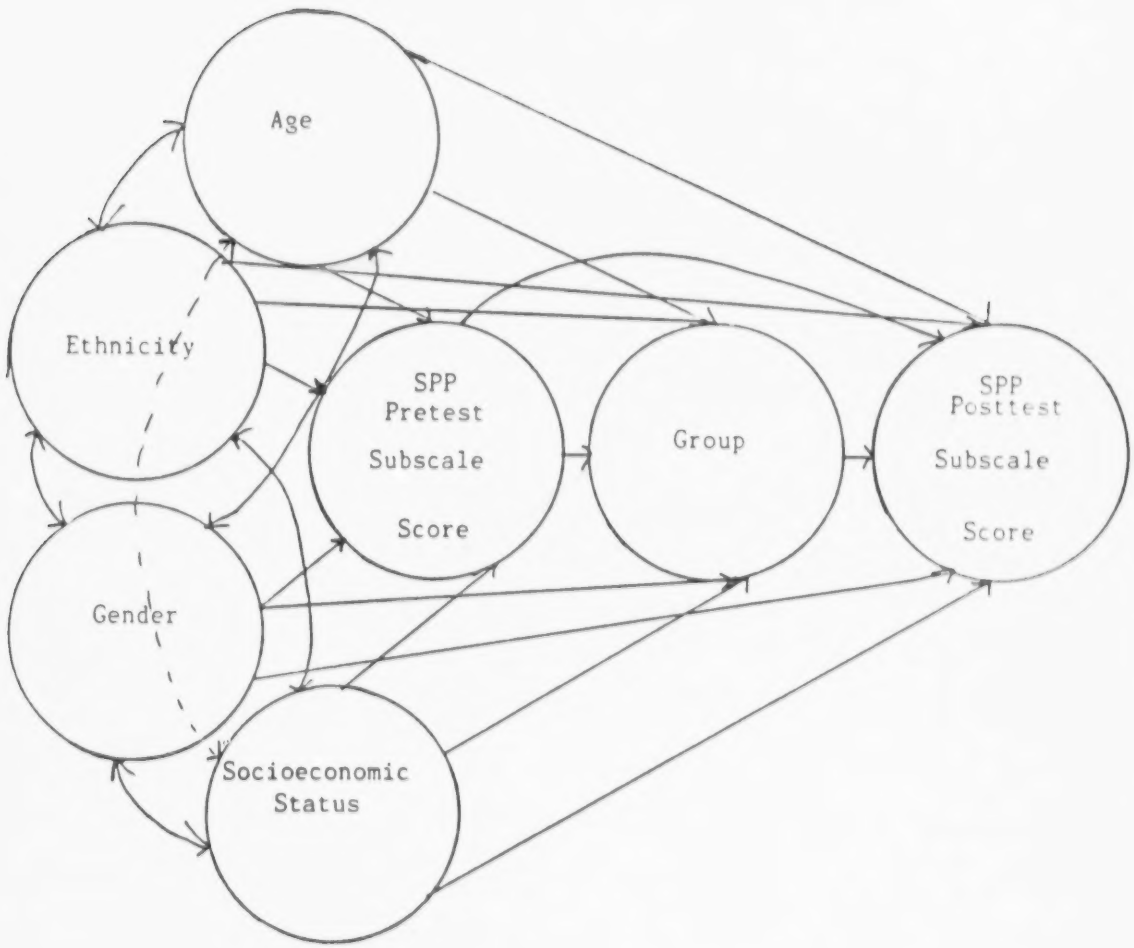


Figure 4.4. Model Used in Self-Perception Profile Regression Analysis

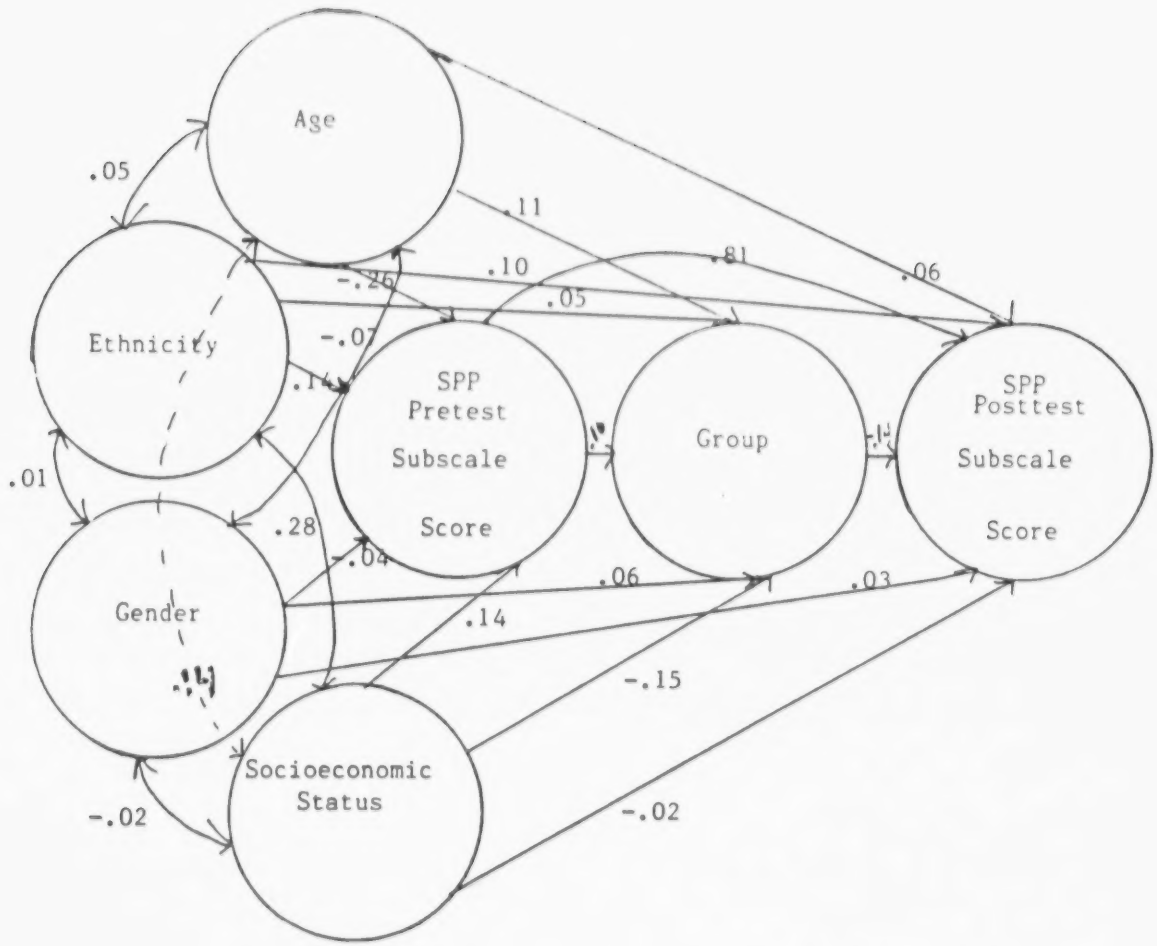


Figure 4.5. Full Path Analysis of Scholastic Competence Subscale

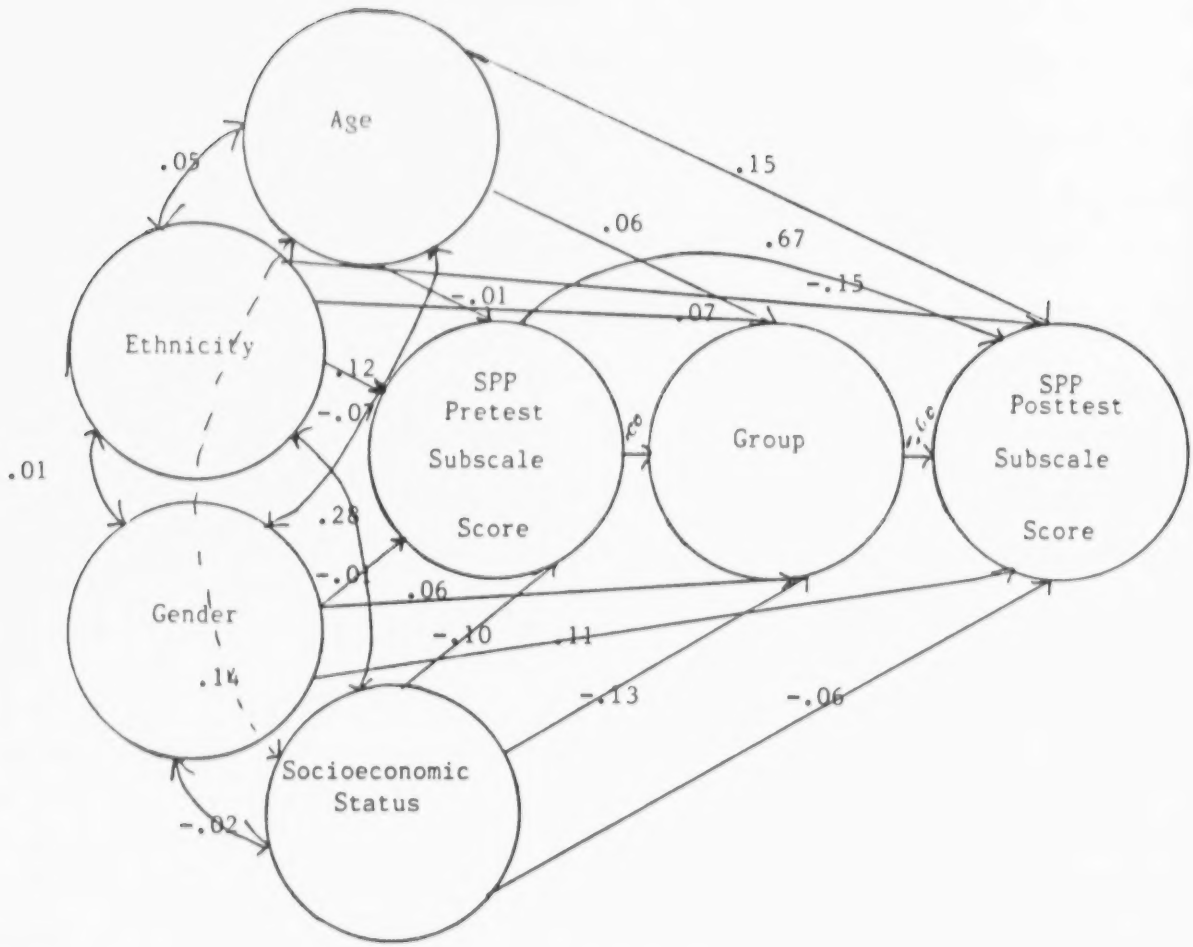


Figure 4.6. Full Path Analysis of Social Acceptance Subscale

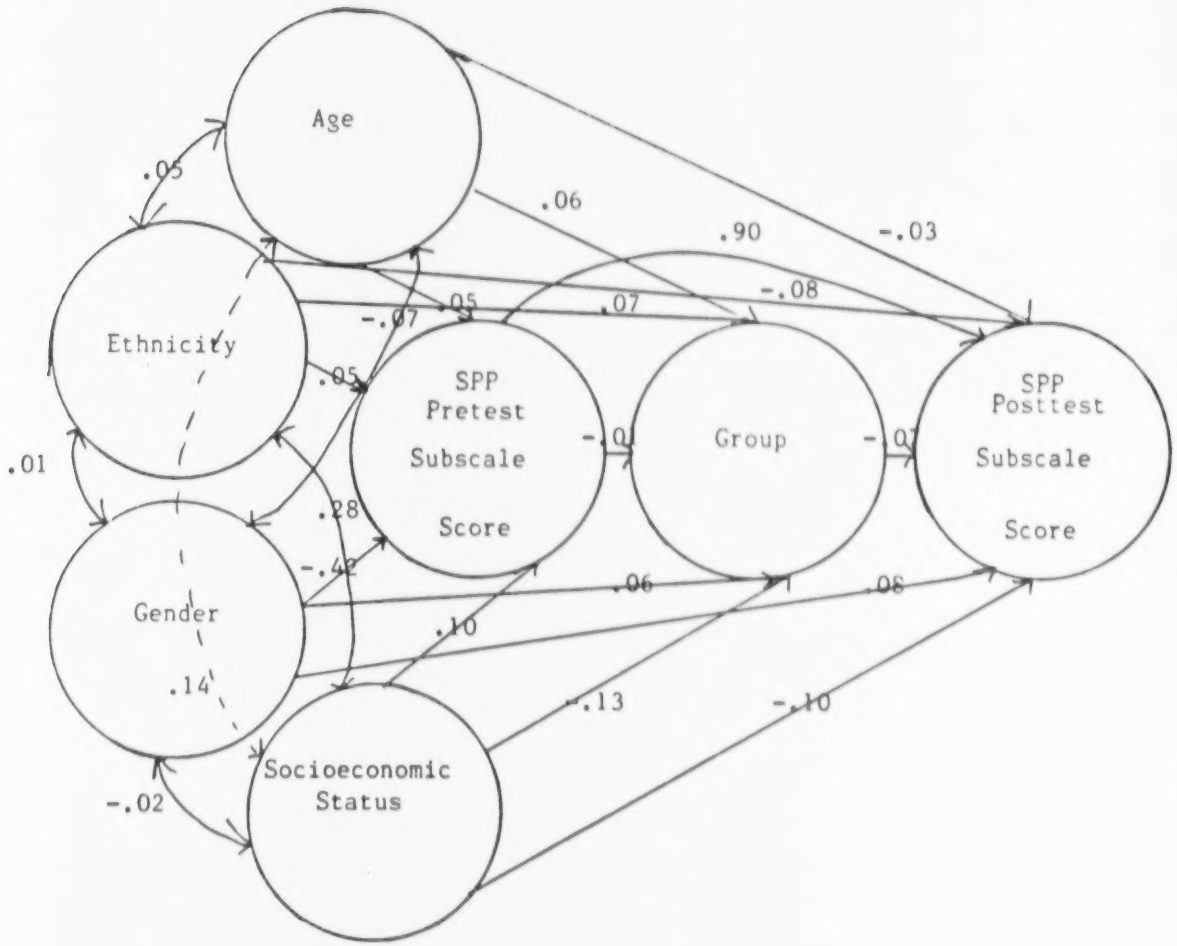


Figure 4.7. Full Path Analysis of Athletic Competence Subscale

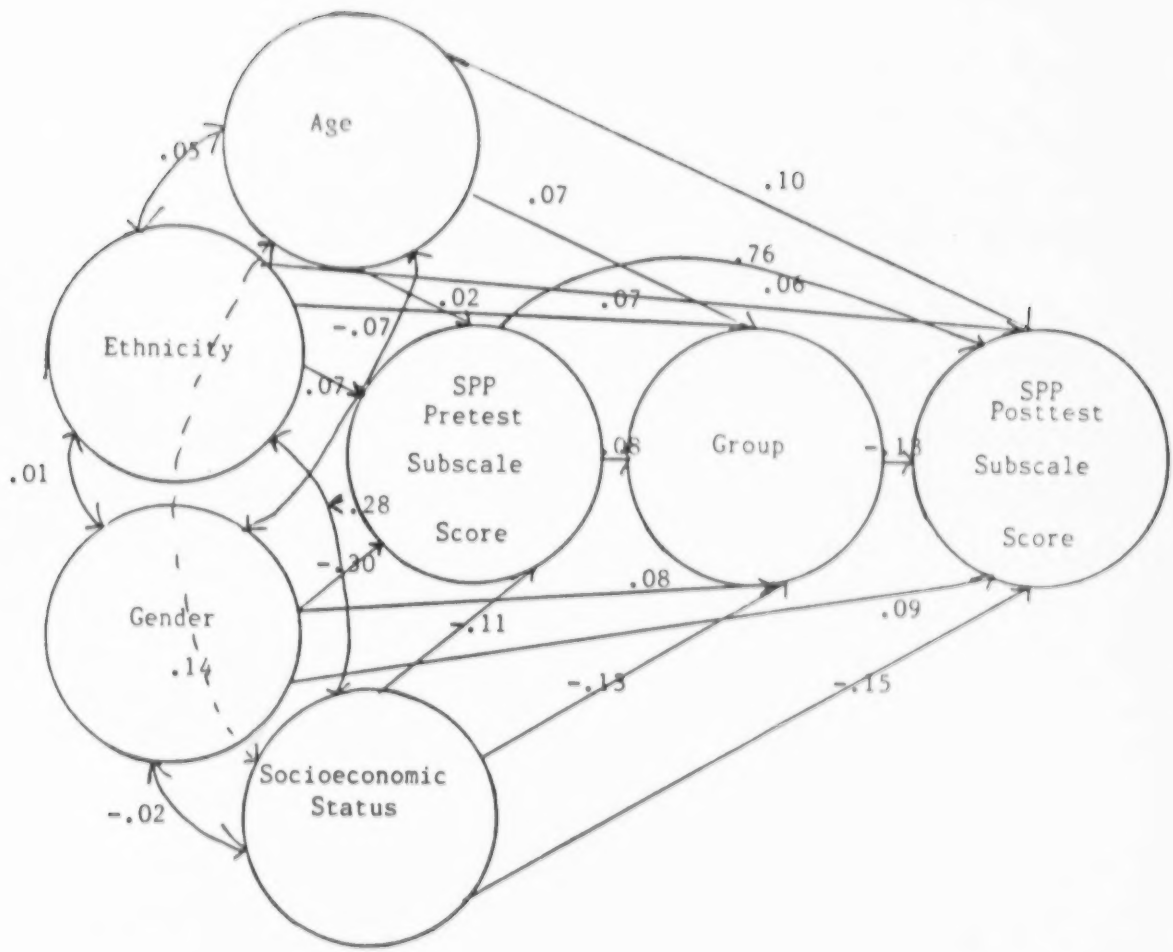


Figure 4.8. Full Path Analysis of Physical Appearance Subscale

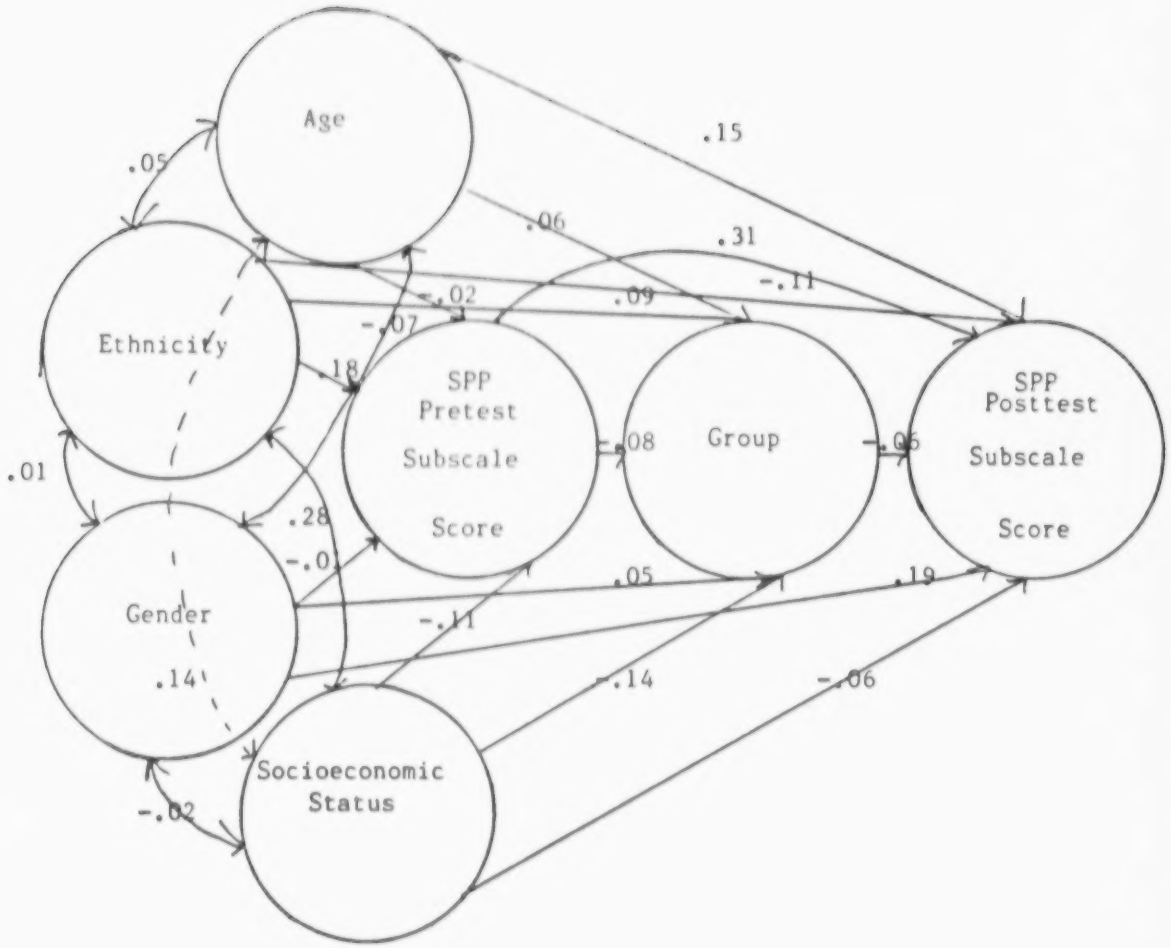


Figure 4.9. Full Path Analysis of Job Competence Subscale

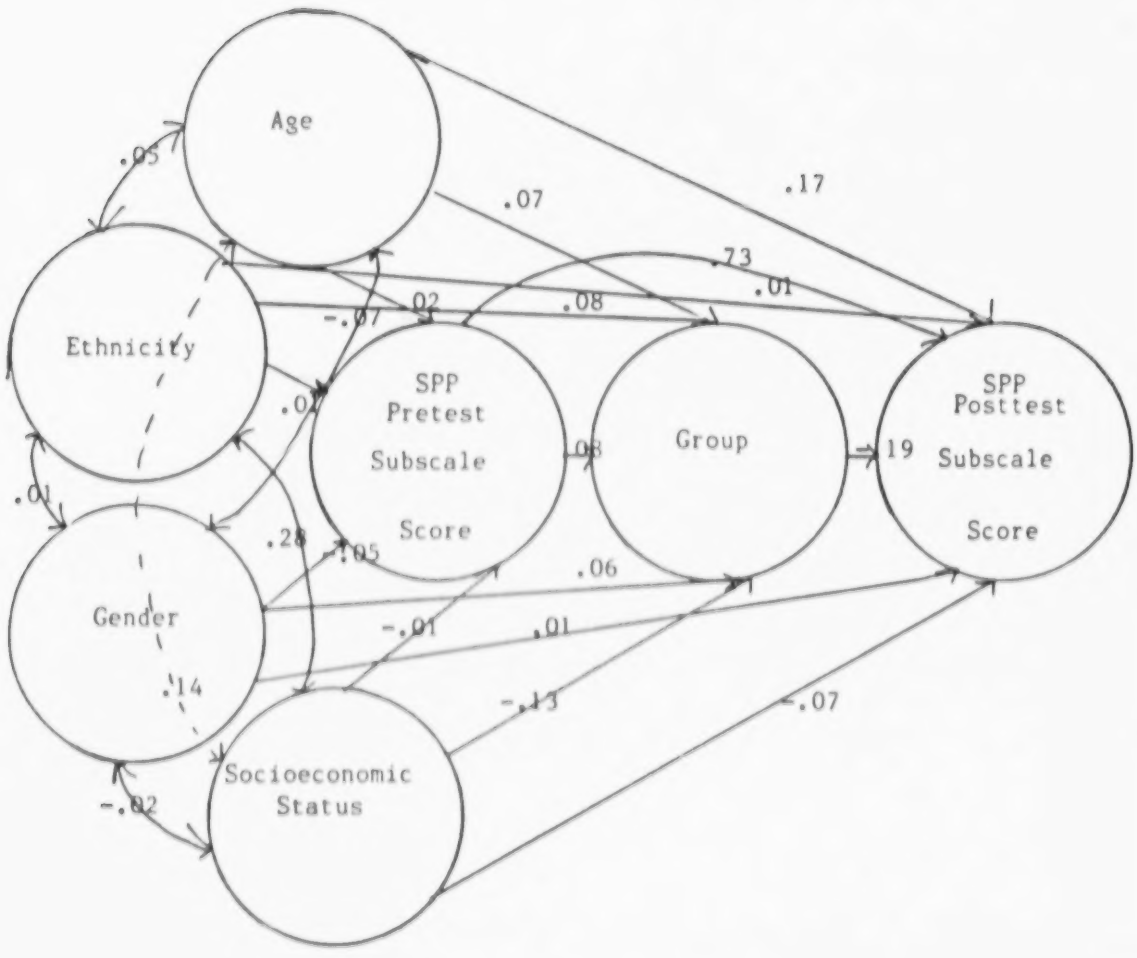


Figure 4.10. Full Path Analysis of Romantic Appeal Subscale

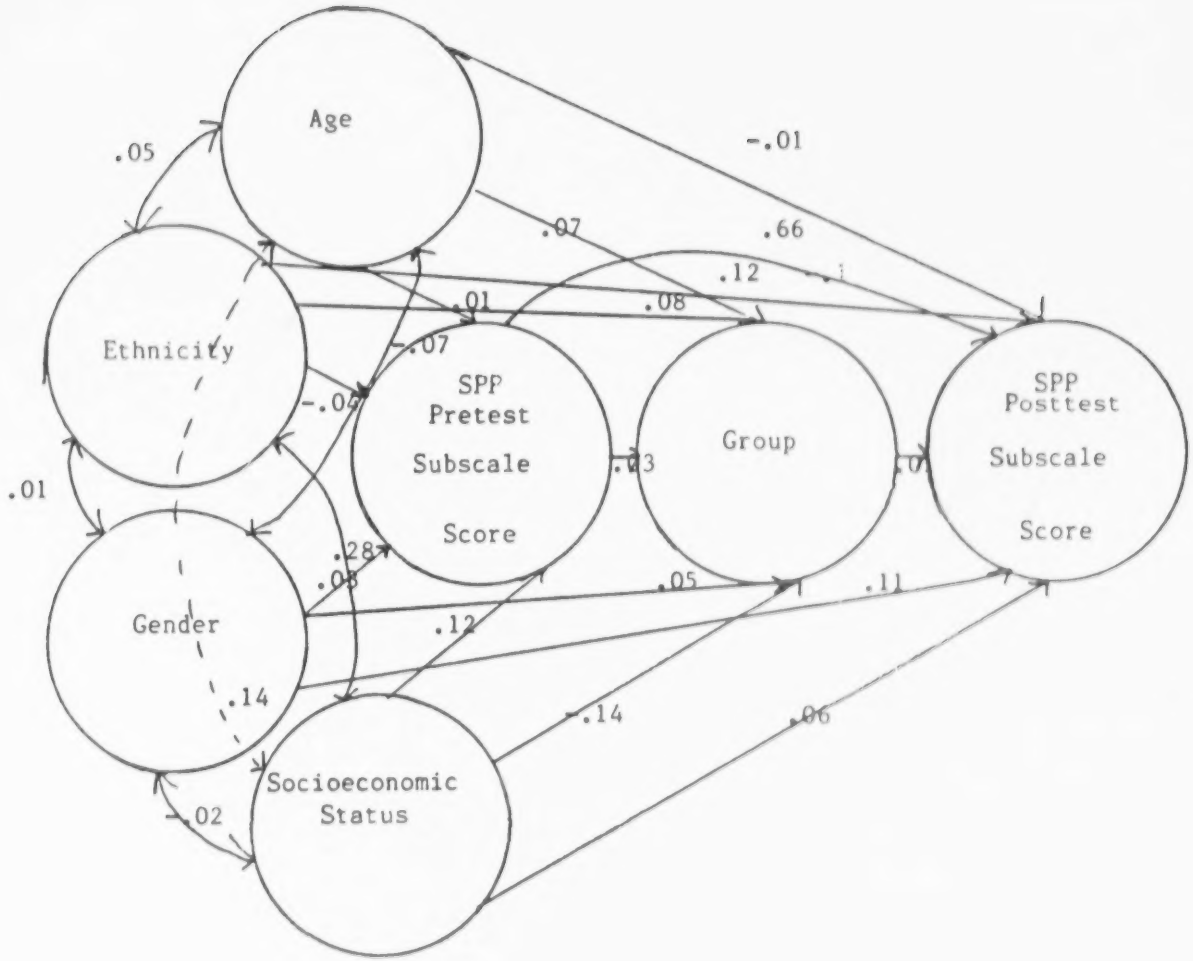


Figure 4.11. Full Path Analysis of Conduct/Morality Subscale

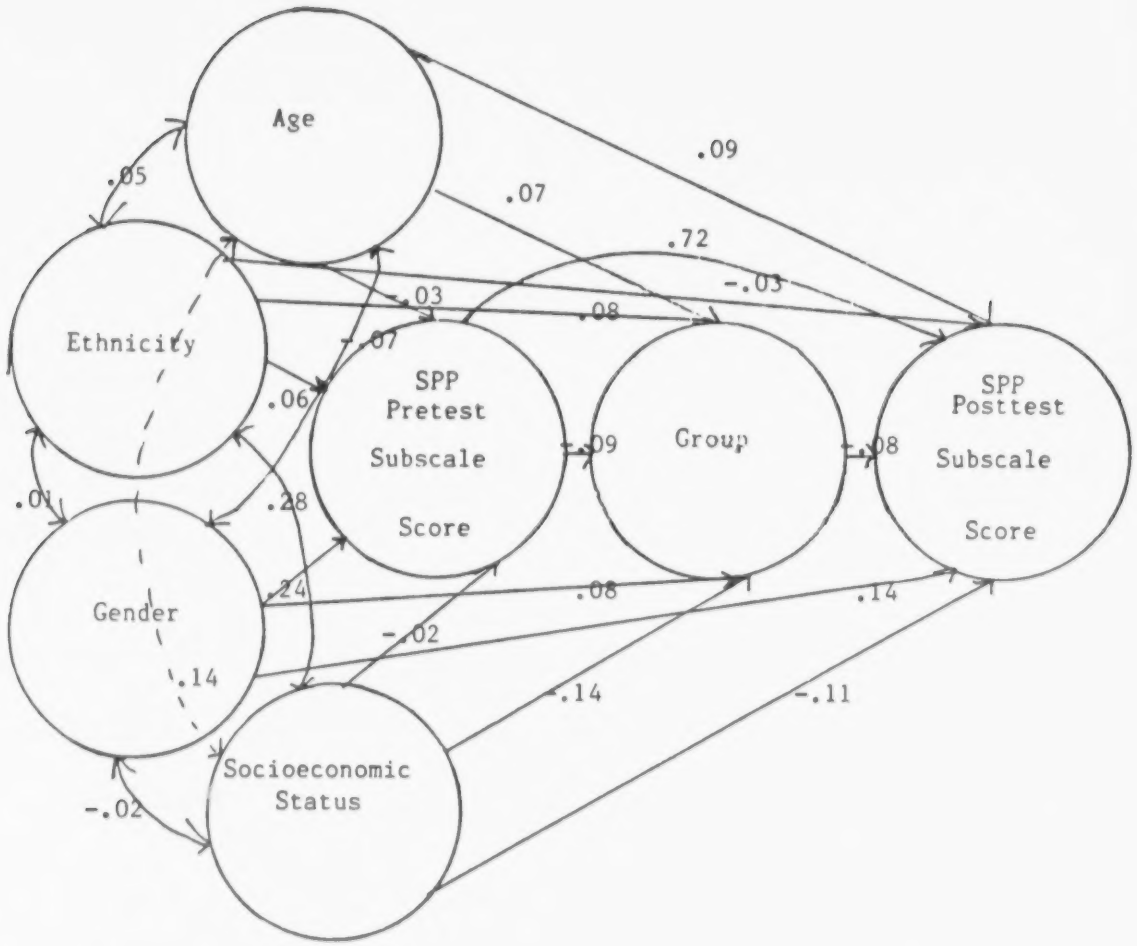


Figure 4.12. Full Path Analysis of Close Friendship Subscale

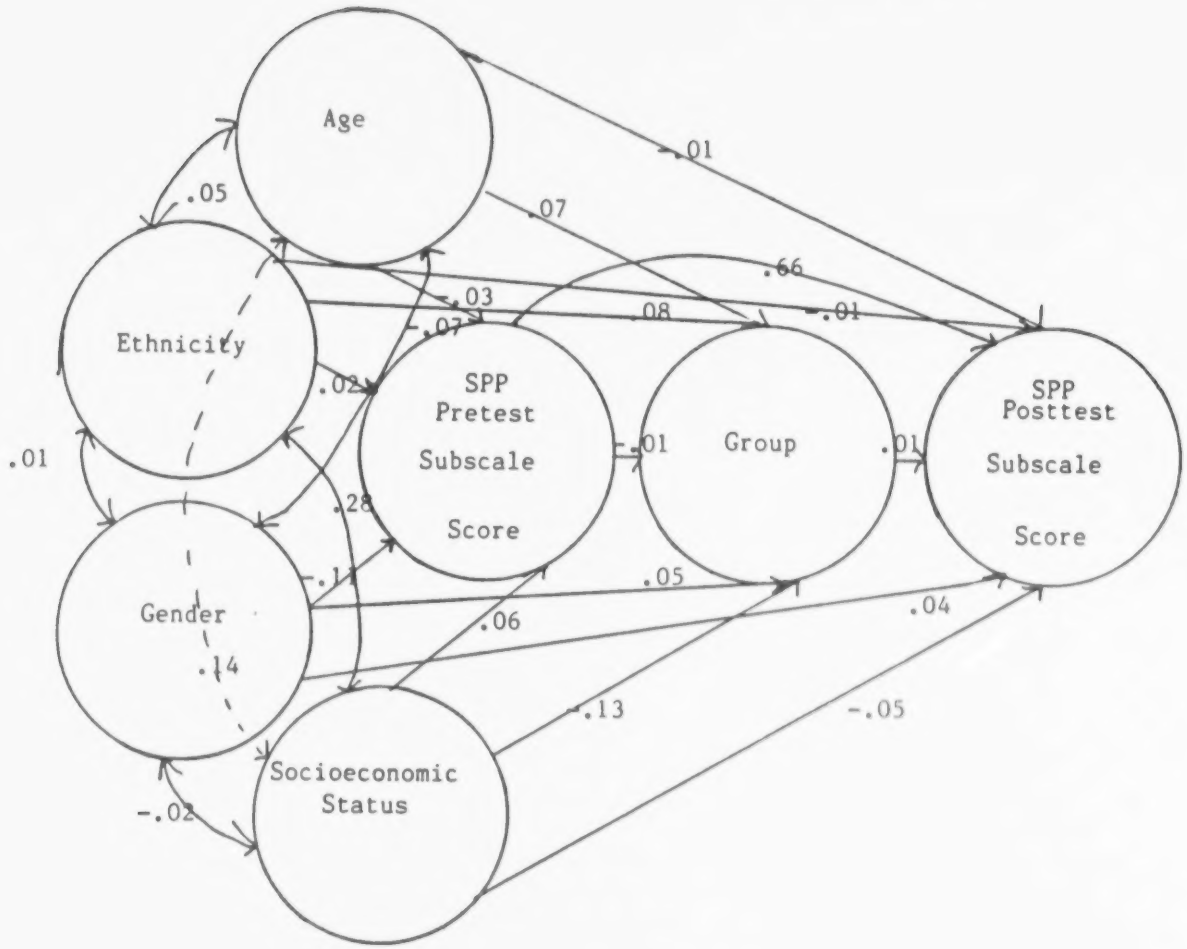


Figure 4.13. Full Path Analysis of Global Self-Worth Subscale

Scholastic competence and social acceptance were best predicted by age. The younger the subject, the more

socially accepted and scholastically competent he or she felt. Group was the second best predictor of scholastic competence, and the socioeconomic status of the family was the third best predictor. This analysis indicated that subjects who had taken ACHIEVE had a more positive perception of their scholastic competence, although this was not supported in the analysis of covariance. Ethnicity was the second best predictor of social acceptance, with minority students having a more positive perception of themselves than white subjects. Females saw themselves as more socially accepted than males across all groups. These models account for 64% of the variance in scholastic competence scores and 50% of the social acceptance variation.

Gender was the best predictor in the job competence, physical appearance, and close friendship subscales. There was more variation in physical appearance subscales for females, which, in general, were higher than the physical appearance scores for males. The job competence subscale model accounted for only 16% of the variance in subscale scores, but indicated that females, again, had more positive perceptions of their work than males. On the close friendship subscale, females scored an average of 10% higher than males. Socioeconomic status of the family was the second best predictor in physical appearance and close friendship, unexpectedly, indicating that the subjects from the wealthier homes had more negative perceptions of themselves physically and as close friends. Ethnicity was the second

best predictor of job competence, indicating that white subjects perceived themselves as more competent than minority students as employees. The physical appearance model accounted for 59% of the variance in scores, the job competence model accounted for only 16% of the variance, and the close friendship model accounted for 61% of the variation in scores. Socioeconomic status was the best predictor for athletic competence, and, when combined with gender, accounted for 75% of the variance between scores. Ethnicity and gender were the best predictors for the conduct/morality subscale, and accounted for 48% of the variance in scores. Minority students appeared to have more positive moral perceptions of themselves, as did females.

To summarize, this study suggested a number of specific conclusions. First, Phase I indicated that the health portion of the class increased reproductive knowledge. The achieve portion made the self-perception of the adolescents more positive, to varying degrees, across the subscales, although that increase was not statistically significant at the .05 level set the the researcher. Phase II of the study indicated that students lost 50% of the general reproductive knowledge they gained in the health class within nine weeks, and that their perceptions returned to pretest levels within nine weeks. When the pretest was administered to the control group, 18 weeks later, the mean scores on both measures were equivalent, indicating that both the experimental and control groups were drawn from the same population.

Regression analyses indicated that students who had taken the ACHIEVE portion of the health class first had more positive perceptions of themselves on the scholastic competence, romantic appeal, and physical appearance subscales than students who had taken the health portion of the class first.

Chapter 5

Summary, Conclusions, and Recommendations

Summary

Almost all schools present some sexuality education. The purpose of this study was to investigate the relation of reproductive knowledge and self-perception in students taking a health class that focuses on these two areas. Is their self-perception affected by increased reproductive knowledge? Is their reproductive knowledge affected by taking the self-perception portion of the class? Do they retain more reproductive knowledge if their self-perception is improved? This research, and questions of this nature assume that sexuality education programs do increase reproductive knowledge, clarify values, and improve decision-making and communication skills. It is also assumed that these things, in turn, will reduce irresponsible sexual behavior, unintended pregnancies, sexually transmitted diseases, and some sexual dysfunction, and will improve self-perception.

Theories in the literature present adolescents as having negative self-perception, and relate many of the problems associated with adolescence to self-perception and sexuality. Socially and educationally, adults involved with adolescents are those most concerned about rising adolescent pregnancy rates, suicides, and substance abuse rates. The most common place to address these problems is the

classroom. Can health classes help alleviate these problems? Specifically, can they raise the self-perception of adolescents, and significantly add to their reproductive knowledge?

The findings in this study suggest a number of specific conclusions. First, in contrast to what adolescents say about their sexual knowledge, the subjects all had very little factual knowledge about reproduction. The sexuality portion of the health class did significantly add to the amount of reproductive knowledge students had. The ACHIEVE portion of the class did raise the self-perception of those students who took that portion first, although the results were not statistically significant at the .05 level using two-tailed tests.

In Phase II, the students who had taken the sexuality portion of the health class first lost 50% of the knowledge they gained within the nine weeks between the posttests. The subjects who took the ACHIEVE portion of the class in Phase II also showed improved self-perceptions, although the results were not statistically significant at the .05 level using two-tailed tests. The students who had taken the sexuality portion of the class prior to taking the ACHIEVE portion did perceive themselves as more romantically appealing than the subjects who had taken the ACHIEVE portion first. The design of the study made it impossible to measure whether this increase would be stable for an extended period.

The comparison of means in Phase III of the design assured that differences in maturity had not created significant differences in pretest scores between experimental and control groups. The causal models indicated that socioeconomic status was the best predictor of general reproductive knowledge pretest and posttest scores. Gender was the next best predictor. On the self-perception subscales, the only prediction supporting the hypotheses was that students who had taken the ACHIEVE portion of the class first would score higher on the scholastic competence, romantic appeal and physical appearance subscales when other independent variables were taken into account during Phase II. In contrast to the GRK model, gender, ethnicity and age were consistently the best predictors of self-perception, across all subscales. The causal model proposed and estimated in the study was effective in explaining the differences in both the GRK and SPP (except for the job competence subscale). This conclusion must be tempered, however, by the fact that a majority of this explained variance was due to the presence of the pretest in the model.

Conclusions

It seems unfair to judge this health class not only on reproductive knowledge, but on self-perception as well (Kirby, 1984). This study has investigated these areas, however, because schools, parents, and adolescents are concerned with the social problems associated with adolescence.

The results consistently indicate that students' level of reproductive knowledge is increased by taking a health class, which is the general consensus of the sexuality education literature. The results also indicate that students retain only 50% of that knowledge nine weeks after taking the class. Based on this finding, it would appear that the students did not perceive the information in the sexuality portion of the health class as relevant, and that increased reproductive knowledge will not change behavior.

Behavior cannot be affected by knowledge that is not retained. Also supporting the literature are the statistically insignificant changes in self-perception in the subjects. Although the mean scores on the Self-Perception Profile subscales did increase over the course of the class, it would be inappropriate to assume the class was responsible for these changes. Given the definition and sensitive nature of self-perception, any and all events in the lives of the subjects will have been reflected in the SPP scores. The causal models support the assertion that social groupings impose on the child a characteristic lifestyle, set of values, and system of beliefs and ideals which covertly, imperceptibly, unintentionally provide the basis for self-judgement (Rosenberg, 1965).

Recommendations for Researchers and Teachers

The relation between these social groupings and self-perception could be investigated as a part of a future

study, as could the content of the retained reproductive knowledge. Both of these areas of research would strengthen the theoretical assumption that sexuality education does increase not only knowledge, but decision-making and interpersonal communication skills, all of which affect behavior, sexual and social. It is reasonable to say from these findings that the portion of the class addressing reproductive knowledge did increase that knowledge. The portion of the health class directed at changing the self-perception of the student was effective and in general made the self-perceptions of the students more positive, although not at a statistically significant level.

What is not supported by this research is the assumption that change in sexual behavior has a relation to both factual knowledge and self-perception, nor was it included in the initial research design. The results of this study suggest that in order to affect sexual behavior the curricula of health and sexuality classes must address behavior directly, and not indirectly by merely increasing general reproductive knowledge and self-perception. In future research, it is suggested that projects include an evaluation of behavior, using pregnancy rates or the use of contraceptives as a dependent measure. The researcher also suggests lengthening studies of this kind to include post-tests six months after the class to measure the long-term effects of the class, and interviews to capture the effects of the class from the student's perspective. For example,

research questions to guide the development of future studies are: Do students perceive the class differently depending on their ethnicity, gender, or sexual orientation? Is the seminar structure of the class equally effective for boys and girls? What is the relation between socioeconomic status and self-perception?

Teachers, on the other hand, need to know what general reproductive knowledge is being retained by students after the health portion of the class. This information must be considered relevant by the students and should be the focus of the curriculum. If promoting responsible sexual behavior is the goal of the health class, then sexual behavior must be specifically addressed in the class. This research does not support the assumption that increased self-perception enhances the quantity of general reproductive knowledge retained or that increased general reproductive knowledge enhances self-perception. Therefore, it cannot be assumed that increasing general reproductive knowledge or enhancing self-perception can affect sexual behavior.

Sexual behavior can only be changed by health class curricula that addresses behavior. For example, in addressing contraception, discussions, activities, and course materials must focus on all aspects of contraceptive use by adolescents. Why do adolescents use or not use contraceptives? Do girls and boys feel equally responsible for providing contraceptives? Do they talk about contraception before intercourse? Does having planned intercourse, rather

than allowing impulsive intercourse to happen, make the behavior more immoral?

Having a positive self perception, and knowing what contraceptive methods are available and where to get contraceptives, are important pieces of information in sexual decision-making. The are not, however, all the pieces of the puzzle. Sexuality education must also address behavior directly if it is to be successful in combating the problems related to adolescent self-perception and sexuality.

The conclusions of this research also indicate that although the ACHIEVE curriculum makes students' self-perception more positive, that change is short term in duration. Future studies must address how curricula of this sort can effect long-term gain. How can parents be included in the ACHIEVE curriculum so they can learn how to support the changes in their adolescents' self-perception? Could there be periodic ACHIEVE meetings that address self-perception issues? Could such meetings reinforce individual skills that maintain positive self-perception and combat negative environmental influences? Could teachers, administrators and members of the community benefit from a class that focuses on the self-perception of adolescents and how their interactions with adolescents affect that self-perception?

Sexuality classes (or more commonly, health classes) like the one examined in this study are extremely valuable to society. They not only increase reproductive knowledge

and self-perception, but also strive to affect sexual behavior. In order to have the beneficial effect of making sexual behavior more responsible, this research suggests that teachers include more behavior-oriented curriculum in health classes, and that the self-perception curriculum be extended to include families and the community. Changes of this nature can teach adolescents--society's future adults--the skills necessary to maintain positive self-perception.

Appendix A

Parent Information

Name:
Address: _____

_____

Phone:
Class:

Period: _____ Sex: M F
circle one

Race: check one

White _____ Other _____

Black _____ Asian _____

Hispanic _____

American Indian _____

SS#: - -
Name of parent at the phone number below:

_____
first/last

Grade Level: 9 10 11 12
circle one

Age: _____

Have you ever taken a Health or Sex Ed class? _____

If so, when? _____

Briefly describe what it covered:

_____

_____

_____

Demographic Information Card Completed by Students

Santa Cruz High School

Office of the Principal
415 Walnut Avenue
Santa Cruz, CA 95060
(408) 429-3960

September, 1986

Dear

I am a master's student in education at the University of California, Santa Cruz. With the cooperation of Santa Cruz High School, I am conducting a research project on how students see themselves. As you may know, Santa Cruz High offers a unique program called ACHIEVE (Adolescents Changing Habits in Education, Values, and Esteem) as part of the required Health class. I am interested in the relation between students' self-perception and the information that is presented in this class. I would like to ask your permission for your son or daughter to participate in my research.

Each student involved in the study will complete a fifteen-minute questionnaire that reflects his or her self-perception three times during the semester. I will also have access to their scores on the tests that the teacher gives as part of the class. There are no risks or discomfort associated with participation in this research. If you agree to have your child participate, I would like you to complete the Family Information Questionnaire and the Human Subject Consent form required by the University of California (I apologize for the formality of this form). All of the information will be completely confidential, and any results that are published will describe only the group as a whole. I would like to share the results of this study with you, and if you circle "yes" on question twenty of the Family Information Questionnaire, I will send you a summary of my findings.

Please sign the Consent form and fill out the Questionnaire, and return them in the enclosed envelope. Keep this letter for your reference. If you have any questions or concerns, please call me at 338-9291.

Thank you for your time and cooperation. I look forward to hearing from you.

Sincerely,

Nancy Brown

Nancy Brown

This research project has been approved by the Santa Cruz City School District.

Barbara Kingsby

Barbara Kingsby
Principal, Santa Cruz High School

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

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SANTA BARBARA • SANTA CRUZ

SANTA CRUZ, CALIFORNIA 95064

FAMILY INFORMATION QUESTIONNAIRE

Please fill in this questionnaire as completely as you can. The information will be kept strictly confidential and will in no way affect your child.

1. Name of child participating in the study _____
2. Name of person completing this questionnaire _____
3. Relationship to student participating in the study _____
4. Today's date _____
5. Are you a single parent? (circle one) YES NO
   If yes, complete only the questions that pertain to you.

MOTHER	FATHER
6. Age _____	7. Age _____
8. Occupation _____	9. Occupation _____
10. Last grade completed (circle one) 1 2 3 4 5 6 7 8 9 10 11 12 College 1 2 3 4 5 6+	11. Last grade completed (circle one) 1 2 3 4 5 6 7 8 9 10 11 12 College 1 2 3 4 5 6+
12. Put a check next to your political affiliation _____ Democrat _____Republican _____ Libertarian _____Independent _____ Peace and Freedom _____ Other: _____	13. Put a check next to your political affiliation _____ Democrat _____Republican _____ Libertarian _____Independent _____ Peace and Freedom _____ Other: _____
14. Put a check next to your ethnic identity _____ White _____ Black _____ Mexican American _____ Asian _____ Mexican _____ American Indian _____ Other: _____	15. Put a check next to your ethnic identity _____ White _____ Black _____ Mexican American _____Asian _____ Mexican _____ American Indian _____ Other: _____

16. Check the amount of your combined annual family income
    _____ below $6,000 _____ $6,001-$10,000 _____ $10,001-$15,000
    _____ $15,001-$20,000 _____ $20,001-$30,000 _____ $30,001-$40,000
    _____ $40,001-$50,000 _____ $50,001+
17. Number of children living with you _____
18. What are their ages? _____
19. Would you be willing to participate in a telephone interview?
    (circle one) YES NO If yes, what is your phone number? _____
20. Would you like to be notified of the results when this study is completed?
    (circle one) YES NO

Question 21 is only for descriptive statistics and is optional.

21. Put a check next to the group that represents your religious affiliation
    _____ Catholic _____ Presbyterian _____ Lutheran _____ Methodist
    _____ Baptist _____ Unitarian _____ Other: _____

UNIVERSITY OF CALIFORNIA

CONSENT TO ACT AS HUMAN SUBJECT

(Short Form)

Subject's Name: _____

Date: 1-10-87

Name of Project: Self-Perception & Health Locus

I hereby consent to be a participant in the activity named above. An explanation of the procedure(s) and/or investigation(s) to be followed, including an identification of those which are experimental, and their purposes, was provided to me by Nancy B. (Name). I was provided with a description of the attendant discomforts and risks to be expected. I was assured that any inquiries concerning the procedure(s) and/or investigation(s) would be answered. I was assured that I am free to withdraw my consent and to discontinue participation in the project or activity at any time without prejudice.

SUBJECT'S SIGNATURE: _____

AUDITOR-WITNESS: N/A
(To oral presentation and signature)

(If subject is a minor or otherwise unable to sign, complete the following):

Subject is a minor (age___), ~~or is unable to sign because~~

_____

N/A

_____

_____ & _____
Father Guardian

& _____
Mother

PLEASE RETURN THIS FORM WITH ALL SIGNATURES TO THE CONTRACTS & GRANTS OFFICE, 399 APPLIED SCIENCE BUILDING.

Appendix B

Measures

What I Am Like

Name_____ Age_____ Birthday_____ Group_____
Month Day

SAMPLE SENTENCE

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
a)	☐	☐	Some teenagers like to go to movies in their spare time	**BUT**	Other teenagers would rather go to sports events.	☐	☐
1.	☐	☐	Some teenagers feel that they are just as smart as others their age	**BUT**	Other teenagers aren't so sure and wonder if they are as smart.	☐	☐
2.	☐	☐	Some teenagers find it hard to make friends	**BUT**	For other teenagers it's pretty easy.	☐	☐
3.	☐	☐	Some teenagers do very well at all kinds of sports	**BUT**	Other teenagers don't feel that they are very good when it comes to sports.	☐	☐
4.	☐	☐	Some teenagers are *not* happy with the way they look	**BUT**	Other teenagers *are* happy with the way they look.	☐	☐
5.	☐	☐	Some teenagers feel that they are ready to do well at a part-time job	**BUT**	Other teenagers feel that they are not quite ready to handle a part-time job.	☐	☐
6.	☐	☐	Some teenagers feel that if they are romantically interested in someone, that person will like them back.	**BUT**	Other teenagers worry that when they like someone romantically, that person *won't* like them back.	☐	☐
7.	☐	☐	Some teenagers usually do the right thing	**BUT**	Other teenagers often don't do what they know is right.	☐	☐
8.	☐	☐	Some teenagers are able to make really close friends	**BUT**	Other teenagers find it hard to make really close friends.	☐	☐
9.	☐	☐	Some teenagers are often disappointed with themselves	**BUT**	Other teenagers are pretty pleased with themselves.	☐	☐
10.	☐	☐	Some teenagers are pretty slow in finishing their school work	**BUT**	Other teenagers can do their school work more quickly.	☐	☐
11.	☐	☐	Some teenagers have a lot of friends	**BUT**	Other teenagers don't have very many friends.	☐	☐
12.	☐	☐	Some teenagers think they could do well at just about any new athletic activity	**BUT**	Other teenagers are afraid they might not do well at a new athletic activity.	☐	☐

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
13.	☐	☐	Some teenagers wish their body was different	BUT	Other teenagers like their body the way it is.	☐	☐
14.	☐	☐	Some teenagers feel that they *don't* have enough skills to do well at a job	BUT	Other teenagers feel that they *do* have enough skills to do a job well.	☐	☐
15.	☐	☐	Some teenagers are *not* dating the people they are really attracted to	BUT	Other teenagers *are* dating those people they are attracted to.	☐	☐
16.	☐	☐	Some teenagers often feel guilty about certain things they do	BUT	Other teenagers hardly ever feel guilty about what they do.	☐	☐
17.	☐	☐	Some teenagers can be trusted to keep secrets that their friends tell them	BUT	Other teenagers have a hard time keeping secrets that their friends tell them.	☐	☐
18.	☐	☐	Some teenagers don't like the way they are leading their life	BUT	Other teenagers do like the way they are leading their life.	☐	☐
19.	☐	☐	Some teenagers do very well at their classwork	BUT	Other teenagers don't do very well at their classwork.	☐	☐
20.	☐	☐	Some teenagers are very hard to like	BUT	Other teenagers are really easy to like	☐	☐
21.	☐	☐	Some teenagers feel that they are better than others their age at sports	BUT	Other teenagers don't feel they can play as well.	☐	☐
22.	☐	☐	Some teenagers wish their physical appearance was different	BUT	Other teenagers like their physical appearance the way it is.	☐	☐
23.	☐	☐	Some teenagers are proud of the work they do on jobs they get paid for	BUT	For other teenagers, getting paid is more important than feeling proud of what they do.	☐	☐
24.	☐	☐	Some teenagers feel that people their age will be romantically attracted to them	BUT	Other teenagers worry about whether people their age will be attracted to them.	☐	☐
25.	☐	☐	Some teenagers are usually pleased with the way they act	BUT	Other teenagers are often ashamed of the way they act.	☐	☐
26.	☐	☐	Some teenagers don't really have a close friend to share things with	BUT	Other teenagers *do* have a close friend to share things with.	☐	☐
27.	☐	☐	Some teenagers are happy with themselves most of the time	BUT	Other teenagers are often not happy with themselves.	☐	☐
28.	☐	☐	Some teenagers have trouble figuring out the answers in school	BUT	Other teenagers almost always can figure out the answers.	☐	☐

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
29.	☐	☐	Some teenagers are popular with others their age	**BUT**	Other teenagers are not very popular.	☐	☐
30.	☐	☐	Some teenagers don't do well at new outdoor games	**BUT**	Other teenagers are good at new games right away.	☐	☐
31.	☐	☐	Some teenagers think that they are good looking	**BUT**	Other teenagers think that they are not very good looking.	☐	☐
32.	☐	☐	Some teenagers feel like they could do better at work they do for pay	**BUT**	Other teenagers feel that they are doing really well at work they do for pay.	☐	☐
33.	☐	☐	Some teenagers feel that they are fun and interesting on a date	**BUT**	Other teenagers wonder about how fun and interesting they are on a date.	☐	☐
34.	☐	☐	Some teenagers do things they know they shouldn't do	**BUT**	Other teenagers hardly ever do things they know they shouldn't do.	☐	☐
35.	☐	☐	Some teenagers find it hard to make friends they can really trust	**BUT**	Other teenagers *are* able to make close friends they can really trust.	☐	☐
36.	☐	☐	Some teenagers like the kind of person they are	**BUT**	Other teenagers often wish they were someone else	☐	☐
37.	☐	☐	Some teenagers feel that they are pretty intelligent	**BUT**	Other teenagers question whether they are intelligent.	☐	☐
38.	☐	☐	Some teenagers feel that they are socially accepted	**BUT**	Other teenagers wished that more people their age accepted them.	☐	☐
39.	☐	☐	Some teenagers do not feel that they are very athletic	**BUT**	Other teenagers feel that they *are* very athletic.	☐	☐
40.	☐	☐	Some teenagers really like their looks	**BUT**	Other teenagers wish they looked different.	☐	☐
41.	☐	☐	Some teenagers feel that it's really important to do the best you can on paying jobs	**BUT**	Other teenagers feel that getting the job done is what really counts.	☐	☐
42.	☐	☐	Some teenagers usually *don't* get asked out by people they would like to date	**BUT**	Other teenagers *do* get asked out by people they really want to date.	☐	☐
43.	☐	☐	Some teenagers usually act the way they know they are supposed to	**BUT**	Other teenagers often don't act the way they are supposed to.	☐	☐
44.	☐	☐	Some teenagers *don't* have a friend that is close enough to share really personal thoughts with	**BUT**	Other teenagers do have a close friend that they can share personal thoughts and feelings with.	☐	☐

GENERAL REPRODUCTIVE KNOWLEDGE SURVEY

INSTRUCTIONS: Please choose the best answer and circle the letter next to it. Good Luck!

Date: _____

Period: _____

PLEASE DO NOT WRITE IN THIS SPACE /1
Subject ID #.
-- -- --
1 2 3
Date: 4
Period: 5

1. Which of the following male and female sex organs do NOT develop from the same embryonic tissue? A) clitoris and glans. B) penis and vagina. C) testes and ovaries. D) urethra and vas deferens. 6

2. The uterus is the place inside a woman's body where A) a fertilized egg implants and develops into a baby. B) the eggs are matured. C) sperm are released during intercourse. D) estrogen is produced. 7

3. The following are similarities between males and females. Which is AT LEAST PARTIALLY FALSE? A) The ovaries and testes develop from the same embryonic tissue and after puberty start making eggs and sperm respectively. B) The vas deferens and fallopian tubes develop from the same tissue and both transport sperm and eggs respectively. C) Both sexes become able to reproduce after puberty. D) All of the above are partially false. 8

4. The menstrual cycle begins A) on the last day of bleeding. B) on the first day of bleeding. C) on the first day after bleeding has stopped. D) on the day the egg is released (ovulation). 9

5. A woman experiences fatigue, breast tenderness, anxiety, and irritability a few days before menstruation. She may be suffering from A) toxic shock syndrome. B) premenstrual syndrome. C) pregnancy. D) any of the above. 10

GENERAL REPRODUCTIVE KNOWLEDGE SURVEY PAGE 2

6. Which of the following is NOT COMPLETELY TRUE about erections? A) Erections may be the result of sexual stimulation, a full bladder, or no apparent reason at all. B) Erections are the results of a muscle being filled with blood causing it to become larger and "stiff". C) An erection will subside after ejaculation or on it's own over a period of time. D) Erections cause the penis to lengthen to approximately 5-7 inches regardless of its normal, flaccid size.	PLEASE DO NOT WRITE IN THIS SPACE 11
7. Which of the following is NOT TRUE about circumcision? A) It is frequently done to comply with religious laws or tradition. B) It is a surgical process usually done a few days after birth. C) An uncircumcized male will suffer from infections of the glans and foreskin. D) It involves the removal of the foreskin which covers the head of the penis in an uncircumcized male.	12
8. If 10 couples are involved in sexual relationships and are not using birth control, how many can expect to get pregnant within a year? A) 2 or 3. B) 4 or 5. C) 6 or 7. D) 8 or 9.	13
9. Which of the following is the BEST INDICATION that a woman will ovulate in a few days? A) a slight increase in basal body temperature. B) a slight decrease in basal body temperature. C) the presence of cervical mucus. D) none of the above.	14
For questions 10 - 14, choose the answer which is NOT ACCURATE for the birth control mentioned.	
10. Ovulation Method: A) keeps track of when a female is fertile by changes in her cervical mucus. B) it is recognized as a legitimate form of birth control by the Catholic Church. C) it can also be used to increase chances of getting pregnant. D) it is not a very effective method of birth control even when used correctly.	15
11. Diaphragm: A) it can be purchased at a drug store. B) its only side effect is possible irritation to the vagina or penis. C) it can be inserted up to 6 hours prior to intercourse. D) it should be refitted if you lose/gain 10 lbs.	16

GENERAL REPRODUCTIVE KNOWLEDGE SURVEY PAGE 3

12. Condoms and Foam: A) this combination is very effective and has little ide effect. B) this combination helps prevent S.T.D.'S. C) buying the foam requires a doctor's prescription. D) both the foam and the condom should be used before intercourse begins.

PLEASE DO NOT WRITE IN THIS SPACE

17

13. Vasectomy: A) vasectomies stop the sperm from being produced. B) after a vasectomy the male is still able to ejaculate. C) to insure effectiveness a back up method should be used following a vasectomy until a sperm count shows that no sperm are left. D) in rare cases the body reheals itself after a vasectomy and the male becomes fertile again.

18

14. The Pill: A) the side effects of the pill are similar to pregnancy and although they may be uncomfortable, none are dangerous. B) the pill is a combination of hormones which act in a way similar to pregnancy. C) the pill requires a prescription. D) the pill is a good method if you do not like interruptions prior to or during intercourse.

19

Chose the best answer and circle the letter next to it.

15. Which of the following methods is the MOST EFFECTIVE method of preventing S.T.D.'S? A) condoms. B) foam. C) the "pill". D) the IUD.

20

16. Which of the following would NOT involve a "sore" on the genital area as a possible symptom? A) Gonorrhea. B) Syphilis. C) Herpes. D) Chlamydia.

21

17. A.I.D.S. A) is most likely caused by a penicillin resistant bacteria. B) is spread easy by any contact with an infected person. C) has not been fatal in the majority of cases identified so far. D) may one day be prevented with the development of a vaccine.

22

18. Which of the following S.T.D.'S is NOT caused by a bacteria? A) Syphilis. B) Gonorrhea. C) Herpes. D) Chlamydia.

23

GENERAL REPRODUCTIVE KNOWLEDGE SURVEY PAGE 4

19. Which of the following is an important aspect of development which DOESN'T occur until the third trimester usually? A) development of the eyes. B) ability to respond to stimuli by movement. C) development of the external genitalia. D) maturity of the lungs so that they can exchange gases.	PLEASE DO NOT WRITE IN THIS SPACE 24
20. Which of the following is an ACCURATE statement about development? A) Development begins with the lower half of the body. B) During development we have a tail for a few weeks. C) A fetus does not appear human until well into the fourth month. D) none of the above.	25
21. During stage ii of labor A) the cervix dilates from 3 to 10 cm. B) the cervix dilates from 7 to 10 cm. C) the baby moves through the birth canal and is born. D) the placenta is born.	26
22. The aspiration method of abortion A) is a complicated medical prodcedure involving a great deal of risks. B) is illegal in some states. C) can be done without anaesthesia. D) is usually used in the second trimester.	27
23. Which of the following abortion methods is safest and most commonly used? A) induction abortion. B) aspiration. C) dialation and curettage. D) dialation and evacuation.	28
24. Which of the following statements about abortion is INACCURATE? A) One possible complication of having an abortion in the first six weeks is that the fetus can be missed and the woamn will need a second abortion. B) An untreated infection from an abortion could lead to serious illness, sterility, and even death (although very rarely). C) Abortions are legal in all states. D) Abortions are one of the safest medical procedures there is and involve no serious risks.	29

GENERAL REPRODUCTIVE KNOWLEDGE SURVEY PAGE 5

	PLEASE DO NOT WRITE IN THIS SPACE
25. Differentiate between gender and sex roles.	30
26. A woman is on the second day of her period and has a sudden high fever, muscle ache, and needs to vomit.	31
A) What might she have? (Give the full name).	
B) What should she do?	
27. List three reasons a woman might miss her period.	32
28. How does the scrotum maintain a temperature of about 6 degrees below body temperature?	33
29.-32. Write down the NAME AND FUNCTION of the organs labeled on the overhead.	
29. Female:	34
30. Female:	35
31. Male:	36
32. Male:	37

GENERAL REPRODUCTIVE KNOWLEDGE SURVEY PAGE 6

33. There is one method of birth control which can be taken after unprotected intercourse (such as a case of rape) to prevent a possible pregnancy from continuing.

A) What is this method called?

B) Why isn't this method recommended as a birth control method to use anytime following intercourse?

PLEASE DO NOT WRITE IN THIS SPACE

38

34. Give at least one reason why the following birth control methods might fail.

A) Diaphragm:

B) The "pill":

39

35. Why can syphillis and gonorrhea be treated with antibiotics and A.I.D.S. and herpes can not be treated with antibiotics?

40

36. List two problems that can occur if a woman with a S.T.D. goes untreated during a pregnancy.

41

37. List four symptoms of pregnancy.

42

GENERAL REPRODUCTIVE KNOWLEDGE SURVEY PAGE 7

38	E::plain why a fetus/embryo is more likely to be harmed by alcohol, german measles, and other drugs and illnesses during the first trimester of pregnancy than during the second of third. (This does not mean that the fetus cannot be harmed during the second and third trimester)	PLEASE DO NOT WRITE IN THIS SPACE 43
39.	Give an argument for and against the statement " A fetus feels pain during an abortion".	44
40.	How is the Human Life Amendment different from other constitutional amendments? (2 differences)	45

Appendix C

Pretest Factor Loadings on All Factors

Subscale and Item

Scholastic Competence	SC	SA	AC	PA	JC	RA	CM	CF	GS
Item 1		.08	.08	.19	.07	.17	.12	.03	.13
Item 10		-.03	-.02	-.01	.02	-.06	.14	.11	.09
Item 19		-.05	.06	.01	.10	-.12	.25	.08	.14
Item 28		.02	.01	.14	.16	.06	.09	.07	.10
Item 37		.01	.12	.21	.14	.12	.20	.10	.13
Social Acceptance									
Item 2	.05		.22	.20	.15	.09	.25	.46	-.16
Item 11	.01		.18	.27	.34	.22	.20	.48	-.26
Item 20	.09		.15	.08	.20	.02	.40	.30	.11
Item 29	.12		.25	.37	.12	.36	.08	.39	.15
Item 38	.09		.22	.27	.39	.21	.12	.39	-.06
Athletic Competence									
Item 3	.09	.19		.22	.06	.09	-.09	.03	.02
Item 12	.12	.13		.19	-.02	.20	.02	.08	.16
Item 21	.08	.08		.71	-.01	.24	.07	-.05	.02
Item 30	.09	-.01		.61	-.01	.17	.19	.08	.11
Item 39	-.10	.14		.68	.01	-.04	.02	.08	.11
Physical Appearance									
Item 4	.10	.03	.16		.09	.12	.03	.01	.28
Item 13	.09	-.12	.32		-.02	.18	.03	-.01	.37
Item 22	.06	-.05	.23		.02	.10	-.03	.04	.33
Item 31	.14	.16	.15		.12	.53	-.03	-.02	.08
Item 40	.06	.13	.17		.30	.22	.04	.07	.22
Job Competence									
Item 5	.14	.07	-.02	.09		.19	.51	.05	-.03
Item 14	.20	.19	.07	.19		.11	.58	.11	.23
Item 23	.09	-.04	.02	.16		.09	.63	.06	.25
Item 32	.09	.10	-.08	-.02		.01	.25	.16	.34
Item 41	.06	.13	.05	.02		-.04	.19	.03	.11
Romantic Appeal									
Item 6	.12	.05	.12	.52	-.10		.02	.05	.01
Item 15	-.02	-.07	-.01	.36	.01		.32	.24	-.09
Item 24	.14	.22	.15	.55	-.03		.06	.11	.04
Item 33	-.01	.17	.17	.38	-.10		.33	.16	-.05
Item 42	-.01	.08	.04	.33	-.17		.12	.24	-.10

Conduct/ Morality								
Item 7	.24	.08	.07	.18	.21	-.01	-.03	.46
Item 16	.15	-.06	-.04	.07	-.21	.25	.09	.24
Item 25	.06	.29	.09	.16	.24	-.01	.29	.30
Item 34	.14	-.17	.10	-.09	.01	-.21	-.18	.58
Item 43	.19	.16	.04	-.05	.46	-.06	-.10	.35
Close Friendship								
Item 8	.12	.30	.02	.10	.08	.26	.18	.03
Item 17	.04	.02	-.17	.03	.36	.20	.41	.07
Item 26	.08	.04	-.04	.07	.05	.12	.09	.16
Item 35	.10	.29	.01	.05	-.10	-.01	.06	.21
Item 44	.02	.04	-.11	-.03	-.02	.09	.05	.19
Global Self-Worth								
Item 9	.12	.25	.11	.41	.02	.02	.05	.12
Item 18	.09	.05	.09	.19	.07	-.11	.19	.15
Item 27	.03	.27	.18	.34	.19	.07	.17	.18
Item 36	.11	.27	.09	.37	.26	.16	.14	.29
Item 45	.13	.22	.20	.28	.19	.16	.20	.10

Appendix D

Results of Unhypothesized Analyses

Results of Unhypothesized Analyses

The tables in this Appendix represent the analyses of covariance of the posttest or delayed posttest scores using the pretest or posttest scores for each subscale as a covariate, along with an independent variable, such as gender or age.

Table D.1. Analysis of Covariance on Posttest Self-Perception Profile Close Friendship Subscale Total Scores by Ethnicity

Covariate	N	Adjusted Means	R-Square	df	F value	p <
Pretest	122		.63	1	180.37	.0001
Ethnicity				5	3.14	.0107
Other		19.24				
Hispanic		17.05				
Asian		13.95				
American Indian		12.17				
Black		15.05				
White		15.74				

Table D.2. Analysis of Covariance on Posttest Self-Perception Profile Physical Appearance Subscale Total Scores by Group

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	125		.56	1	148.73	.0001
Group				1	3.08	.0817
(1)		14.03				
(2)		13.35				

Table D.3. Analysis of Covariance on Posttest Self-Perception Profile Scholastic Competence Subscale Total Scores by Grade Level

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	121		.63	1	191.77	.0001
Grade Level				2	2.65	.0748
10		14.92				
11		15.17				
12		16.17				

Table D.4. Analysis of Covariance on Posttest Self-Perception Profile Physical Appearance Subscale Total Scores by Grade Level

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	121		.54	1	131.02	.0001
Grade Level				2	3.85	.0239
10		13.29				
11		14.10				

Table D.5. Analysis of Covariance on Posttest Self-Perception Profile Romantic Appeal Subscale Total Scores by Ethnicity

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	122		.57	1	133.04	.0001
Ethnicity				5	3.22	.0094
Other		15.96				
Hispanic		12.96				
Asian		12.72				
American Indian		7.06				
Black		10.60				
White		12.69				

Table D.6. Analysis of Covariance on Delayed Posttest Self-Perception Profile Global Self-Worth Subscale Total Scores by Age

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Posttest	116		.49	1	93.73	.0001
Age				5	2.02	.0818
13		16.98				
14		14.59				
15		15.46				
16		15.75				
17		16.16				
18		20.86				

Table D.7. Analysis of Covariance on Delayed Posttest Self-Perception Profile Close Friendship Subscale Total Scores by Age

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Posttest	116		.54	1	109.37	.0001
Age				5	3.92	.0026
13		17.26				
14		15.47				
15		16.42				
16		15.55				
17		16.13				
18		7.01				

Table D.8. Analysis of Covariance on Delayed Posttest Self-Perception Profile Conduct/Morality Subscale Total Scores by Group

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Posttest	120		.50	1	110.88	.0001
Group				1	3.89	.0509
(1)		14.09				
(2)		14.73				

Table D.9. Analysis of Covariance on Delayed Posttest Self-Perception Profile Job Competence Subscale Total Scores by Gender

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	136		.36	1	62.75	.0001
Gender				1	10.95	.0012
Male		16.05				
Female		17.18				

Table D.10. Analysis of Covariance on Delayed Posttest Self-Perception Profile Conduct/Morality Subscale Total Scores by Ethnicity

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	133		.46	1	95.54	.0001
Ethnicity				5	2.43	.0384
Other		14.48				
Hispanic		14.23				
Asian		13.90				
American Indian		17.56				
Black		12.48				
White		14.26				

Table D.11. Analysis of Covariance on Delayed Posttest Self-Perception Profile Conduct/Morality Subscale Total Scores by Gender

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	136		.44	1	97.73	.0001
Gender				1	5.55	.0200
Male		14.62				
Female		13.82				

Table D.12. Analysis of Covariance on Delayed Posttest Self-Perception Profile Physical Appearance Subscale Total Scores by Age

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	132		.57	1	157.33	.0001
Age				4	2.40	.0537
13		15.07				
14		13.81				
15		13.30				

Table D.13. Analysis of Covariance on Delayed Posttest Self-Perception Profile Global Self-Worth Subscale Total Scores by Grade Level

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	131		.38	1	64.09	.0001
Grade Level				2	7.05	.0012
10		14.89				
11		16.30				
12		16.70				

Table D.14. Analysis of Covariance on Delayed Posttest Self-Perception Profile Social Acceptance Subscale Total Scores by Ethnicity

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	133		.45	1	90.38	.0001
Ethnicity				5	2.69	.0241
Other		15.61				
Hispanic		15.51				
Asian		14.49				
American Indian		13.10				
Black		12.86				
White		15.91				

Table D.15. Analysis of Covariance of Delayed Posttest General Reproductive Knowledge Scores by Ethnicity

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	135		.26	1	19.44	.0001
Ethnicity			.26	5	5.18	.0002
Other		33.64				
Hispanic		35.65				
Asian		59.09				
American Indian		55.61				
Black		28.54				
White		48.98				

Table D.16. Analysis of Covariance of Delayed Posttest General Reproductive Knowledge Scores by Gender

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	135		.26	1	19.44	.0001
Gender			.13	1	3.23	.0747
Male		44.72				
Female		49.40				

Table D.17. Analysis of Covariance of Delayed Posttest General Reproductive Knowledge Scores by Gender

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Posttest	121		.47	1	.11	ns
Gender			.05	1	5.96	.0161
Male		41.97				
Female		49.46				

Table D.18. Analysis of Covariance of Posttest General Reproductive Knowledge Scores by Group

Covariate	N	Adjusted Means	R-Square	df	F Value	p <
Pretest	125		.69	1	31.07	.0001
Group				1	236.12	.0001
(1)		19.38				
(2)		52.92				

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